NetEVS 3.1

User Manual

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Introduction

NetEVS is a fully distributed solution, designed for large multi-site and multiple server installations requiring 24/7 surveillance, with support for devices from different vendors. The solution offers centralized management of all devices, servers, and users, and empowers an extremely flexible rule system driven by schedules and events.

NetEVS consists of the following main elements:

- The **Management Server** is the center of your NetEVS installation.
  - ***What?*** Stores the surveillance system's configuration in a relational database, either on the Management Server computer itself or on a separate SQL Server on the network. Also handles user authentication, user rights, etc.
  - ***Where?*** Runs as a service, and is typically installed on a dedicated server.

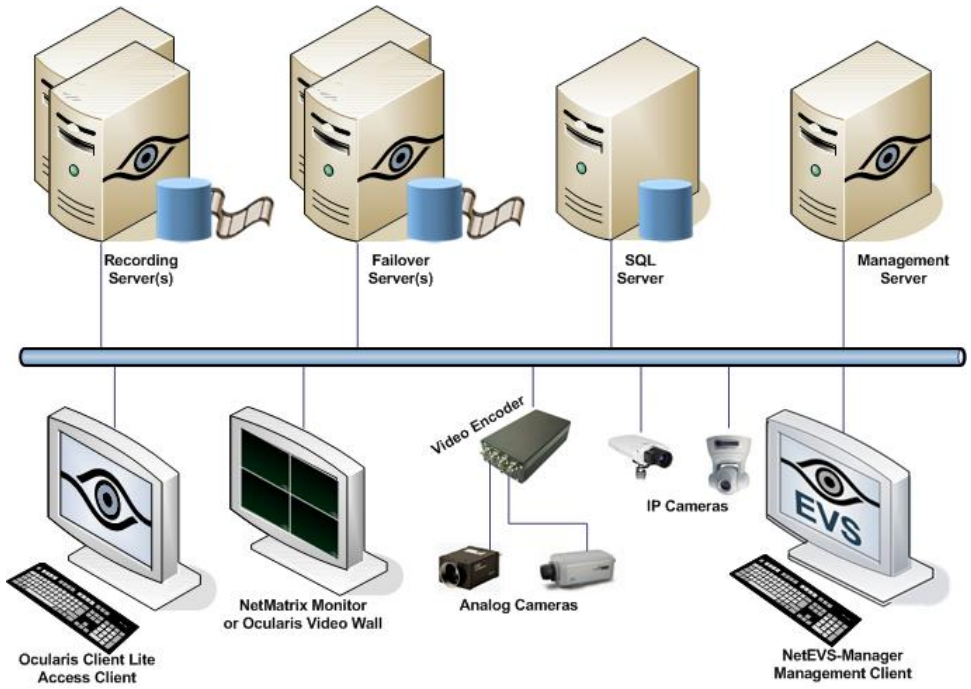
- The **Recording Server**
  - ***What?*** Used for recording video and for communicating with cameras and other devices. In large installations, more than one recording server is often used on the surveillance system. Failover servers can be set up to take over if a recording server becomes temporarily unavailable.
  - ***Where?*** Recording servers as well as failover servers run as services, and are typically installed on separate servers rather than on the Management Server itself.

- The **Management Client**
  - ***What?*** Feature-rich administration client, called ***NetEVS-Manager***, for configuration and day-to-day management of the system.
  - ***Where?*** Typically installed on the surveillance system administrator's workstation or similar.

- The **Download Manager**
  - ***What?*** Lets surveillance system administrators manage which NetEVS-related components (e.g. particular language versions of clients) your organization's users will be able to access from a targeted web page generated by the Management Server.
  - ***Where?*** Automatically installed on the Management Server during NetEVS installation process.

- The **Video Client**
  - ***What? Ocularis™ Client Lite*** enables access to live and recorded video as well as other key surveillance system features, such as export of recordings for use as evidence.
  - ***Where?*** The very feature-rich ***Ocularis Client Lite*** must be installed on users' computers.
  - ***How?*** Users connect to the Management Server for initial authentication, then transparently to the recording servers for video recordings, etc.

NetEVS handles an unlimited number of cameras, servers, and users—across multiple sites if required.



Example of a NetEVS solution. The number of cameras and recording servers, as well as the number of connected access clients, can be as high as you require.

NetEVS furthermore includes fully integrated NetMatrix functionality for distributed viewing of video from any camera on your surveillance system to any computer with the Ocularis Client Lite application when logged in to NetEVS directly. Or if you log in to Ocularis™ Base via Ocularis™ Client, you have access to the optional Ocularis™ Video Wall feature

Finally, the system offers the possibility of including a standalone Ocularis™ Viewer application when exporting video evidence from the Ocularis Client or Ocularis Client Lite. The Ocularis Viewer allows recipients of video evidence (such as police officers, internal or external investigators, etc.) to browse and play back the exported recordings without having to install the Ocularis Client software on their computers.

System Requirements

The following are *minimum* requirements for the computers used in an NetEVS solution:

- **Computer Running Management Server**
  - **CPU:** Intel® Xeon®, minimum 2.0 GHz (Dual Core recommended)
  - **RAM:** Minimum 1 GB (2 GB or more recommended)
  - **Network:** Ethernet (1 Gbit recommended)
  - **Graphics Adapter:** Onboard GFX, AGP or PCI-Express, minimum 1024×768, 16 bit colors
  - **Hard Disk Type:** E-IDE, PATA, SATA, SCSI, SAS (7200 RPM or faster)
  - **Hard Disk Space:** Minimum 10 GB free (depends on number of servers, cameras, rules, and logging settings)
  - **Operating System:** Microsoft® Windows® Server 2008 (32 or 64 bit)*, Microsoft® Windows® Server 2003 (32 or 64 bit)*
    * Limited by Windows operating system to ten concurrent, incomplete outbound TCP connection attempts
  - **Software:** Microsoft .NET 3.5 Framework Service Pack 1, and Internet Information Services (IIS) 5.1 or newer
- **Computer Running Recording Server or Failover Server**
  - **CPU:** Dual Core Intel Xeon, minimum 2.0 GHz (Quad Core recommended)
  - **RAM:** Minimum 1 GB (2 GB or more recommended)
  - **Network:** Ethernet (1 Gbit recommended)
  - **Graphics Adapter:** Onboard GFX, AGP, or PCI-Express, minimum 1024×768, 16 bit colors
  - **Hard Disk Type:** E-IDE, PATA, SATA, SCSI, SAS (7200 RPM or faster)
  - **Hard Disk Space:** Minimum 100 GB free (depends on number of cameras and recording settings)
  - **Operating System:** Microsoft® Windows® 7 Ultimate (32 bit or 64 bit*), Microsoft® Windows® 7 Enterprise (32 bit or 64 bit*), Microsoft® Windows® 7 Professional (32 bit or 64 bit*), Microsoft® Windows® Server 2008 (32 or 64 bit*), Microsoft® Windows® Vista® Business (32 or 64 bit*), Microsoft® Windows® Vista Enterprise (32 or 64 bit*), Microsoft® Windows® Vista Ultimate (32 or 64 bit*), Microsoft® Windows® XP Professional (32 or 64 bit*) or Microsoft® Windows® Server 2003 (32 or 64 bit*)
    * Note that recording servers will always run 32-bit.

    Tip: You can run multiple instances of the 32-bit Recording Server service on servers with 64-bit operating systems and sufficient RAM; see Multiple Recording Server Instances.
  - **Software:** Microsoft .NET 3.5 Framework Service Pack 1 or newer
- **Computer Running Management Client**
  - **CPU:** Intel Core2™ Duo, minimum 2.0 GHz
  - **RAM:** Minimum 1 GB
  - **Network:** Ethernet (100 Mbit or higher recommended)

- **Graphics Adapter:** AGP or PCI-Express, minimum 1024×768 (1280×1024 recommended), 16 bit colors
- **Hard Disk Space:** Minimum 100 MB free
- **Operating System:** Microsoft® Windows® XP Professional (32 bit or 64 bit*), Microsoft® Windows® Server 2003 (32 bit or 64 bit*), Microsoft® Windows® Server 2008 (32 bit or 64 bit*), Microsoft® Windows® Vista Business (32 bit or 64 bit*), Microsoft® Windows® Vista Enterprise (32 bit or 64 bit*), Microsoft® Windows® Vista Ultimate (32 bit or 64 bit*), Microsoft® Windows® 7 Ultimate (32 bit or 64 bit*), Microsoft® Windows® 7 Enterprise (32 bit or 64 bit*), Microsoft® Windows® 7 Professional (32 bit or 64 bit*)
  *) Running as a 32 bit service/application
- **Software:** Microsoft .NET 3.5 Framework Service Pack 1, DirectX 9.0 or newer, and Windows Help (WinHlp32.exe) which you can download from http://www.microsoft.com/downloads/.

- **Computer Running Ocularis Client/Ocularis Client Lite**
  - **CPU:** Intel Core2 Quad, minimum 2.8 GHz
  - **RAM:** Minimum 2 GB recommended
  - **Network:** Ethernet (100 Mbit or higher recommended)
  - **Graphics Adapter:** PCI-Express, 256 MB RAM, Direct 3D Supported
  - **Hard Disk Space:** Minimum 100 MB free
  - **Operating System:** Microsoft® Windows® XP Professional SP3 (32 bit or 64 bit*), Microsoft® Windows® Vista Business (32 bit or 64 bit*), Microsoft® Windows® Vista Enterprise (32 bit or 64 bit*), Microsoft® Windows® Vista Ultimate (32 bit or 64 bit*), Microsoft® Windows® 7 Ultimate (32 bit or 64 bit*), Microsoft® Windows® 7 Enterprise (32 bit or 64 bit*), Microsoft® Windows® 7 Professional (32 bit or 64 bit*)
    * Running as a 32 bit service/application
  - **Software:** Microsoft .NET 3.0 Framework and DirectX 9.0 or newer
- **Computer Running NetMatrix Monitor**
  - **CPU:** Intel Pentium 4, minimum 2.4 GHz
  - **RAM:** Minimum 512 MB (1 GB recommended on Microsoft Windows Vista)
  - **Network:** Ethernet (100 Mbit or higher recommended)
  - **Graphics Adapter:** AGP or PCI-Express, minimum 1024 x 768, 16 bit colors
  - **Hard Disk Space:** Minimum 50 MB free
  - **Operating System:** Microsoft Windows XP Professional (32 bit or 64 bit*) and Windows Server 2003 (32 bit or 64 bit*), Windows Vista Business (32 bit or 64 bit*), Windows Vista Enterprise (32 bit or 64 bit*) and Windows Vista Ultimate (32 bit or 64 bit*)
    * Running as a 32 bit service/application
  - **Software:** DirectX 9.0 or newer, and Windows Help (WinHlp32.exe) which you can download from http://www.microsoft.com/downloads/.
- **Active Directory (Optional)**

  NetEVS users are normally added from Active Directory, although users can also be added without Active Directory.

  Active Directory is a distributed directory service included with several Windows Server operating systems; it identifies resources on a network in order for users or applications to access them

  If wishing to add users through the Active Directory service, a server with Active Directory installed, and acting as domain controller, must be available on your network.

NetEVS uses particular ports when communicating with other computers, cameras, etc.

What is a port? A port is a logical endpoint for data traffic. Networks use different ports for different types of data traffic. Therefore it is sometimes, but not always, necessary to specify which port to use for particular data communication. Most ports are used automatically based on the types of data included in the communication. On TCP/IP networks, port numbers range from 0 to 65536, but only ports 0 to 1024 are reserved for particular purposes. For example, port 80 is used for HTTP traffic which is used when viewing web pages.

When using NetEVS, make sure that the following ports are open for data traffic on your network:

- **Port 20 and 21 (inbound and outbound):** Used when recording servers listen for FTP information; some devices use FTP for sending event messages. FTP (File Transfer Protocol) is a standard for exchanging files across networks.
- **Port 25 (inbound and outbound):** Used when recording servers listen for SMTP information. Also, some devices use SMTP (e-mail) for sending event messages and /or for sending images to the surveillance system server via e-mail. SMTP (Simple Mail Transfer Protocol) is a standard for sending e-mail messages between servers.
- **Port 80 (inbound and outbound):** While not directly used by NetEVS, port 80 is typically used by the IIS (Internet Information Services) Default Web Site for running the NetEVS Management Server service.
- **Port 554 (inbound and outbound):** Used by recording servers for RSTP traffic in connection with H.264 video streaming.
- **Port 1024 and above (outbound only (except ports listed below)):** Used for HTTP traffic between cameras and servers.
- **Port 5432 (inbound and outbound):** Used when recording servers listen for alert socket/TCP information; some devices use TCP for sending event messages.
- **Port 7563 (inbound and outbound):** Used for handling PTZ camera control commands, and for communication with access clients.
- **Port 8844 (inbound and outbound):** Used for communication between failover servers.
- **Port 9993 (inbound and outbound):** Used for communication between recording servers and the Management Server.
- **Port 11000 (inbound and outbound):** Used by failover servers for polling (i.e. regularly checking) the state of recording servers.
- **Port 12345 (inbound and outbound):** Used for communication between NetEVS and NetMatrix recipients.
- **Any other port numbers you may have selected to use.** Examples: If you have changed the IIS Default Web Site port from its default port number (80) to another port number, or if you have integrated NetDVMS servers into your NetEVS solution, in which case a port must be allocated for use by NetDVMS's Image Server service.

Note: The port numbers can be changed. Different port numbers may therefore be used in your organization. See Recording Server Service Administration for information about changing the recording server-related port numbers.

Tip: Consult the administrator of your organization's firewall if in doubt about how to open ports for traffic.

Part of the security surrounding the use of a video client with NetEVS is based on tokens.

When you use a client to log in to the surveillance system, the client receives a token from the NetEVS Management Server. The token contains important security-related time information.

The NetEVS Management Server also sends a similar token to the required recording server(s). This is partly due to the fact that recording servers may be located all around the world; each recording server thus uses the token to validate the client's token against the local time in the recording server's own time zone.

The validity of a token expires after a while. It is therefore important that time on your NetEVS Management Server and all of your organization's recording servers is synchronized (minute and second-wise; hours may of course be different in different locations around the world). If time on the servers is not synchronized, you may experience that a recording server is ahead of the Management server's time.

When a recording server is ahead of the NetEVS Management Server's time, it may result in a client's token expiring on the recording server earlier than intended by the Management Server. Under unfortunate circumstances you might even experience that a recording server claims that a client's token has already expired when it receives it; effectively preventing the client from viewing recordings from the recording server.

How to synchronize time on your organization's servers depends on your network configuration, internet access, use of domain controllers, etc. Often, servers on a domain are already time-synchronized against the domain controller. If so, you should be fine as long as all required servers belong to the domain in question.

If your servers are not already time-synchronized, it will be necessary to synchronize the servers' time against a time server, preferably the same time server.

The following articles from Microsoft describe what to do in different situations:

- How to configure an authoritative time server in Windows Server 2003
- How to synchronize the time with the Windows Time service in Windows XP
- Registry entries for the W32Time service

If the above links do not work for you, try searching www.microsoft.com for *time server*, *time service*, *synchronize servers* or similar.

Installation

If upgrading from a previous version of NetEVS, make sure you read the upgrade information.

Your NetEVS installation process begins with the installation of the Management Server software.

- The **Management Server** is the center of your NetEVS installation. It is typically installed on a dedicated server. See Management Server Installation for further information.

Once the Management Server is installed, you are able to install key components required by the Management Server:

- The **Recording Server**, which is used for recording video feeds, and for communicating with cameras and other devices. The recording server is typically installed on one or more separate computers, rather than on the Management Server itself. See Recording Server Installation for further information.

- The **Management Client**, which is used for configuration and day-to-day management of the system. The Management Client, ***NetEVS-Manager***, is typically installed on the system administrator's workstation or similar. See Management Client Installation for further information.

Finally, you are able to install client software for access to cameras installed on the NetEVS NVR:

- **Ocularis Client/Ocularis Client Lite** is used for access to live and recorded video and other features from the surveillance system. The Ocularis Client or Ocularis Client Lite client software must be installed on users' computers. See Ocularis Client Introduction for more information.

Optionally, you can install:

- The **NetMatrix Monitor** for viewing of distributed video from the NetEVS system. See Installing the Matrix Monitor. Note, however, that Ocularis Client also has advanced features for viewing of distributed video.

Tip: Video device drivers are small programs used for controlling/communicating with the cameras connected to a recording server. You get the drivers automatically during the initial installation of your NetEVS system. However, new versions of the drivers are released from time to time; see Video Device Drivers.

If upgrading from a previous version of NetEVS, make sure you read the upgrade information.

Note: Read the License Terms on the Product License Sheet (enclosed with the software CD) before installing any part of NetEVS.

Your NetEVS installation process begins with the installation of the NetEVS Management Server software. The Management Server is the center of your NetEVS installation.

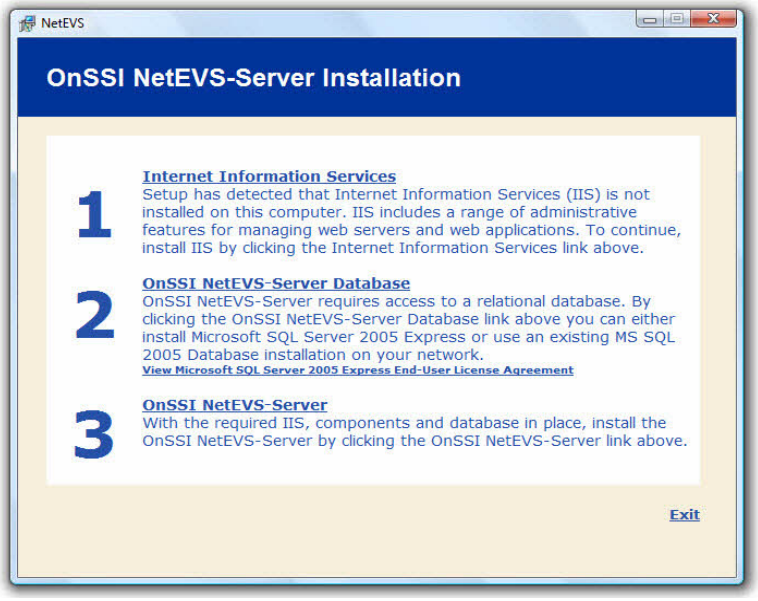
1. Shut down any OnSSI software running. If upgrading, it is highly recommended that you remove any previous versions of the Management Server before upgrading. Note, however, that you may not want to remove the Management Server database, as it contains your NetEVS configuration.

2. Insert the NetEVS software CD. If the *NetEVS Management Server Installation* window does not open automatically upon inserting the CD, run the following file from the CD:

```
setup.exe
```

Tip: Alternatively, if you are installing a version downloaded from the internet, run the setup.exe file from the location you have saved it to.

3. The *OnSSI NetEVS Management Server Installation* window will open, listing the steps involved in the installation.


NetEVS
OnSSI NetEVS-Server Installation
1
Internet Information Services
Setup has detected that Internet Information Services (IIS) is not installed on this computer. IIS includes a range of administrative features for managing web servers and web applications. To continue, install IIS by clicking the Internet Information Services link above.
2
OnSSI NetEVS-Server Database
OnSSI NetEVS-Server requires access to a relational database. By clicking the OnSSI NetEVS-Server Database link above you can either install Microsoft SQL Server 2005 Express or use an existing MS SQL 2005 Database installation on your network.
View Microsoft SQL Server 2005 Express End-User License Agreement
3
OnSSI NetEVS-Server
With the required IIS, components and database in place, install the OnSSI NetEVS-Server by clicking the OnSSI NetEVS-Server link above.
Exit

4. It is highly recommended that you read the release notes before proceeding.

5. Having read the release notes, complete the steps outlined in the *OnSSI NetEVS Management Server Installation* window.

Tip: Depending on what is already installed on the computer which is going to act as Management Server, you may not need to complete all of the window's three steps. The step that currently requires your attention will be highlighted.

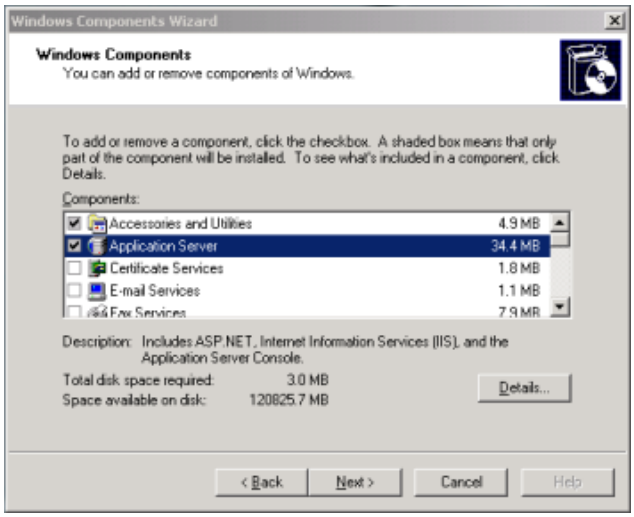
- ### Step 1: Internet Information Services

  Note: The NetEVS Management Server Installation automatically detects if Internet Information Services (IIS) is already installed. If this step is not available, it is simply because IIS is already installed.

  Internet Information Services includes a range of administrative features for managing web servers and web applications, and is required in order to run a NetEVS Management Server.

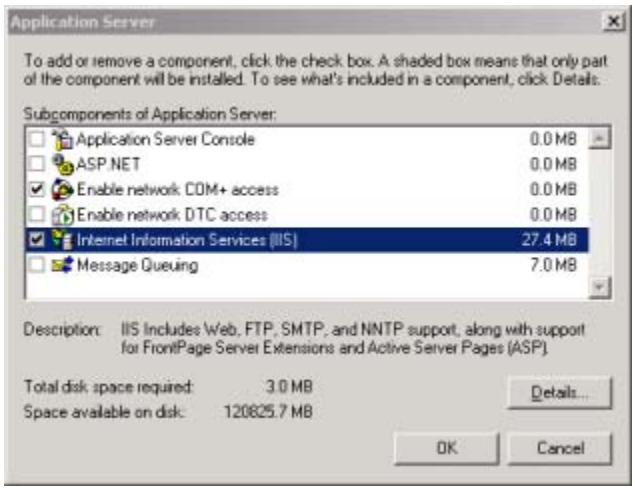
  If installing on a server running Windows 2008 Server, IIS is automatically installed once you click the *Internet Information Services* step (should the automatic installation fail, see Installation Troubleshooting).

  On Windows Server 2003, clicking the *Internet Information Services* step opens Windows' built-in *Windows Components Wizard*:


Windows Components Wizard
Windows Components
You can add or remove components of Windows.
To add or remove a component, click the checkbox. A shaded box means that only part of the component will be installed. To see what's included in a component, click Details.
Components:
Accessories and Utilities 4.9 MB
Application Server 34.4 MB
Certificate Services 1.8 MB
E-mail Services 1.1 MB
Description: Includes ASP.NET, Internet Information Services (IIS), and the Application Server Console.
Total disk space required: 3.0 MB
Space available on disk: 120825.7 MB
Details...
< Back
Next >
Cancel
Help

In the wizard's *Components* list, select *Application Server.*

Click the *Details...* button, and select *Internet Information Services (IIS).*


Application Server
To add or remove a component, click the check box. A shaded box means that only part of the component will be installed. To see what's included in a component, click Details.
Subcomponents of Application Server:
Application Server Console 0.0 MB
ASP.NET 0.0 MB
Enable network COM+ access 0.0 MB
Enable network DTC access 0.0 MB
Internet Information Services (IIS) 27.4 MB
Message Queuing 7.0 MB
Description: IIS Includes Web, FTP, SMTP, and NNTP support, along with support for FrontPage Server Extensions and Active Server Pages (ASP).
Total disk space required: 3.0 MB
Space available on disk: 120825.7 MB
Details...
OK
Cancel

Click the *Details...* button and verify that all IIS subcomponents are selected. Click *OK* to return to the *Windows Components Wizard*.

In the *Windows Components Wizard*, click *Next* and follow the wizard.

Tip: It is a good idea to have your Windows installation CD ready; it may be required during the process.

When IIS is installed, you will be returned to the *NetEVS Management Server Installation* window for the next step of the installation.

- ### Step 2: NetEVS Management Server Database

  The Management Server requires access to a relational database.

  Note: Before completing this step, click the *View Microsoft SQL Server 2005 Express End-user License Agreement* link to read the license agreement for the software.

This step opens the *Database Setup Wizard*, which will guide you through the process of preparing a database for use with the Management Server.

In the *Database Setup Wizard* you will get the choice of using an existing SQL 2005 Server on the network or setting up a SQL Server Express Edition (a lightweight, yet powerful, version of a full SQL server) on the Management Server computer itself.

Which SQL Server type is right for our organization? The SQL Server Express Edition is easy to install and prepare for use, and will often suffice for systems with less than 500 cameras. However, if you plan to perform frequent/regular backups of your database, using an existing SQL Server on the network is recommended. For large installations, such as installations with 500 cameras or more, using an existing SQL Server on the network is always recommended.

Follow the wizard's steps by clicking the *Next* button.

IMPORTANT: We recommend that you install the database on a dedicated hard disk drive that is not used for anything else but the database. Installing the database on its own drive will prevent low disk performance.

IMPORTANT: During the database preparation process, you will be asked whether you want to create a new database, use an existing database, or overwrite an existing database. For a new installation, you would typically select the default option *Create new database*. However, if you are installing the database as part of upgrading to a newer version of NetEVS, and you want to use your existing database, make sure you select *Use existing database*.

When you have prepared the database, you will be returned to the *NetEVS Management Server Installation* window for the last step in the Management Server installation.

- ### Step 3: NetEVS Management Server

This step opens a wizard, which will guide you through the process of installing the Management Server software itself.

NetEVS-Server Setup Wizard
NetEVS-Server Setup
Welcome to the NetEVS-Server Setup. This wizard will guide you through the process of specifying license information, web server site and installing the server.
To continue, click Next
OnSSI
Help
< Back
Next >
Cancel

Opening page in the *NetEVS-Server Setup Wizard*

Follow the wizard's steps by clicking the *Next* button.

Tip: The wizard will ask you to specify your SLC (Software License Code) and the location of your temporary license (.lic) file. The system will verify both before you are able to continue. Therefore, have your SLC and license file ready.

On one of the wizard's steps, you will be asked to select between two installation options:

- ***Typical***

  If you select *Typical* installation, the wizard will install all the Management Server components at their default location and with other default settings. A *Typical* installation is recommended for most users.

  -or-

- **Custom**

  If you select *Custom* installation, you get the option to select where to install each individual Management Server component. A *Custom* installation is recommended for advanced users.

  Only relevant if selecting *Custom* installation:

  On one of the wizard's steps you will be asked to select an IIS (Internet Information Services) web site for the Management Server service:

  Select one of the listed web sites, and make sure the selected web site is started, then click *Next*. If the selected web site is not started, the *Next* button is disabled.

  Tip: You may find that only a single IIS web site—the *Default Web Site*—is listed. In that case simply make sure that the web site is started, then click *Next*.

  Towards the end of the wizard, you will be asked to select a user account under which the Management Server service will run:

Service Log On Setup
Service should log on as:
This predefined account:
Network Service
This account:
Browse...
Password:
Confirm password:
Account description:
The Management Server service will be started using this account. If the computer is a member of a domain the account must either be 'Network Service' or a domain user account.
OK

  You will be able to select either a particular user account (in which case the service will use the specified user account to log in to the computer acting as Management Server) or *Network Service* (in which case the service will run whenever the computer acting as Management Server is running).

  Tip: If the computer acting as Management Server is a member of a domain, you should either select *Network Service,* or make sure that you specify a user account which belongs to the domain in question.

- **How to Select the Predefined Account "Network Service"**

  a. Select *This predefined account*.

  b. Select *Network Service*.

  c. Click *OK*.

- **How to Select a Particular User Account**

  a. Select *This account*.

  b. Click the *Browse...* button. This will open the *Select User* window.

  c. In the *Select User* window, verify that the required domain is specified in the *From this location* field. If not, click the *Locations...* button to browse for the required domain.

  d. In the *Enter the object names to select* box, type the required user name.

  Tip: Typing part of a name is often enough. Use the *Check Names* feature to verify that the name you have entered is recognized.

  e. Click *OK*.

  f. Specify the password for the user account in the *Password* field, and confirm the password in the *Confirm password* field.

  Note: The password fields must not be empty; the password for the account must contain one or more characters and/or digits.

  g. Click *OK*.

Tip: When the Management Server software is installed, you are able to check the state of the Management Server by looking at the Management Server icon in the Management Server computer's notification area. See Management Server Service Administration for more information.

What's next? Upon installation of the Management Server software, the Management Server's built-in web page automatically opens in a browser. The web page lets you install key components required by the Management Server, among these:

- One or more **Recording Server**s (for recording video feeds and for communicating with cameras and other devices)
- The **Management Client** (for configuration and day-to-day management of the system)

Even though the web page opens automatically on the Management Server computer, you will in most cases want to install the key components on other computers than the Management Server itself. This is no problem since installation takes place through the web page, which can easily be accessed from other computers. See Recording Server Installation and Management Client Installation for further information.

If upgrading from a previous version of NetEVS, make sure you read the upgrade information.

Note: Read the License Terms on the Product License Sheet (enclosed with the software CD) before installing any part of On-Net Surveillance Systems, Inc. NetEVS.

The NetEVS Recording Server is used for recording video feeds, and for communicating with cameras and other devices. The recording server is typically installed on one or more separate computers, rather than on the NetEVS Management Server itself.

1. On the computer on which you will install the recording server, shut down any OnSSI software running. If upgrading, it is highly recommended that you remove any previous versions of the recording server before upgrading.

2. With an Internet Explorer browser, connect to the NetEVS Management Server at the following address:

   http://[Management Server address]:[port]/installation/admin/

   where [Management Server address] is the IP address or host name of the Management Server, and [port] is the port number which IIS has been set up to use on the Management Server.

   This will open the Management Server's built-in web page. If not accessing the web page on the Management Server itself, log in with an account which has administrator rights on the Management Server.

OnSSI NetEVS 3.1 Server - Windows Internet Explorer
OnSSI
NVR Network Video Recorder
NetEVS contains a set of administrative applications which are downloaded and installed from this page. User applications can be found on the default download page. If you want to view this page in another language, use the language menu in the top right corner.
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The NetEVS Management Client is the system's administration application, used for setting up hardware, recording servers, security, etc.
Management Client Installer 3.1a
English
Recording Server Installer
The NetEVS Recording Server has features for recording of video and audio feeds, and for communication with cameras and other devices in the surveillance system.
Recording Server Installer 3.1a
English
Video Device Drivers Installer
Video Device Drivers enable supported devices (cameras, video encoders, etc.) to communicate with the surveillance system. Video Device Drivers must be installed on each recording server.
Video Device Drivers Installer 4.7
Device Pack
© 2010 On-Net Surveillance Systems Inc.
Done
Internet | Protected Mode: Off

3. On the web page find the *Recording Server Installer* section, and then click the *English* link under the required recording server version.

   Note: Depending on your security settings, one or more Windows security warnings may appear after you click the link. If such security warnings appear, accept security warnings by clicking *Run* or similar (exact button text depends on your browser version).

   This will open the *On-Net Surveillance Systems, Inc. NetEVS Recording Server Setup* wizard, which will guide you through the installation.
4. On the first step of the wizard, click *Next*.

5. Select installation method:

- ***Typical***

  The *Typical* option installs the NetEVS Recording Server with default settings. A *Typical* installation is recommended for most users.

  a. Specify recording server setup parameters:

  - ***Name*:** A name for the recording server. If required, you can later change the name through the NetEVS Management Client.
  - ***NetEVS Management Server*:** The IP address (example: 123.123.123.123) or host name (example: ourserver) of the Management Server to which the recording server should be connected. If required, you can later change the Management Server IP address/host name as part of the basic administration on the Recording Server service.
  - ***MediaDB*:** The path to the recording server's media database. The media database is the recording server's default storage area, i.e. the default location in which recordings from connected cameras are stored in individual camera databases. If required, you can later change the path, and/or add paths to more storage area locations, from the NetEVS Management Client.

  Click *Next.*

-or-

- ***Custom***

  The *Custom* option lets you select where to install the NetEVS Recording Server components. A *Custom* installation is recommended for advanced users.

  a. Select required installation folder, then click *Next*.

  b. When asked which type of server to install, click the *Standard recording server...* icon. This lets you install a regular recording server.

  c. Specify recording server setup parameters:

  - ***Name*:** A name for the recording server. If required, you can later change the name through the NetEVS Management Client.
  - ***NetEVS Management Server*:** The IP address (example: 123.123.123.123) or host name (example: ourserver) of the Management Server to which the recording server should be connected. If required, you can later change the Management Server IP address/host name as part of the basic administration on the Recording Server service.
  - ***MediaDB*:** The path to the recording server's media database. The media database is the recording server's default storage area, i.e. the default location in which recordings from connected cameras are stored in individual camera databases. If required, you can later change the path, and/or add paths to more storage area locations, from the NetEVS Management Client.

  Click *Next*.

d. The wizard will ask you to select a user account under which the NetEVS Recording Server service will run.

You will be able to select either a predefined system account or a particular user account (in which case the service will use the specified user account to log in to the computer acting as recording server).

Tip: If the computer acting as recording server is a member of a domain, select the predefined account *Local System* or make sure you specify a user account which belongs to the domain in question.

Note: If using network drives, you should always specify a particular user account (which has access to the network drives in question), as the Recording Server service will not be able handle the network drives otherwise.

- **How to Select a Predefined System Account**

1. Select This predefined account.
2. Select *Local System*, *Local Service*, or *Network Service* as applicable.
3. Click *OK*.

- **How to Select a Particular User Account**

1. Select *This account*.
2. Click the *Browse...* button. This will open the *Select User* window.
3. In the *Select User* window, verify that the required domain is specified in the *From this location* field. If not, click the *Locations...* button to browse for the required domain.
4. In the *Enter the object names to select* box, type the required user name.

   Tip: Typing part of a name is often enough. Use the *Check Names* feature to verify that the name you have entered is recognized.

5. Click *OK*.
6. Specify the password for the user account in the *Password* field, and confirm the password in the *Confirm password* field.

   Note: The password must contain one or more characters and/or digits.

7. Click OK.
8. Click Next.
9. In some cases it can be advantageous to install more than one instance of the recording server on the same physical server (see Multiple Recording Server Instances). Specify the required number of instances (default is 1), then click Next.
10. Only relevant if installing more than one instance of the recording server on the same physical server: For each instance, specify the IP address to use for the instance in question. Note that the IP addresses you specify must be assigned to the physical server.

Tip: Provided enough IP addresses are assigned to the server, the fields will be pre-filled.

11. Click Next.

12. Click Install.

13. On the last step of the wizard, click Finish. The recording server is now installed. The recording server has no user interface as such; it is accessed and managed through the Management Client.

If required, repeat the process on other computers to be used as recording servers.

Tip: When the recording server software is installed, you are able to check the state of the recording server by looking at the recording server icon in the recording server computer's notification area. See Recording Server Service Administration for more information.

Note: Read the License Terms on the Product License Sheet (enclosed with the software CD) before installing any part of NetEVS.

The Management Client, *NetEVS-Manager*, is used for configuration and day-to-day management of the NetEVS system. The Management Client is typically installed on the system administrator's workstation or similar.

1. On the computer on which you will install the Management Client, shut down any OnSSI software running. If upgrading, it is highly recommended that you remove any previous versions of the Management Client before upgrading.

2. With an Internet Explorer browser, connect to the NetEVS Management Server at the following address:

   `http://[Management Server address]:[port]/installation/admin/`

   where [Management Server address] is the IP address or host name of the Management Server, and [port] is the port number which IIS has been set up to use on the Management Server.

   This will open the Management Server's built-in web page. If not accessing the web page on the Management Server itself, log in with an account which has administrator rights on the Management Server.

OnSSI NetEVS 3.1 Server - Windows Internet Explorer
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Video Device Drivers Installer 4.7
Device Pack
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Done
Internet | Protected Mode: Off

3. On the web page find the *Management Client Installer* section, and then click the *English* link under the required Management Client version (often, only one version will be available).

   Note: Depending on your security settings, one or more Windows security warnings may appear after you click the link. If such security warnings appear, accept security warnings by clicking *Run* or similar (exact button text depends on your browser version).

   This will open the *NetEVS Management Client Setup* wizard, which will guide you through the installation.

4. On the first step of the wizard, click *Next*.

5. Select required installation folder, then click *Next*. Installation will begin; wait while the required components are installed.

6. Upon installation, you can begin using the Management Client, *NetEVS-Manager*, right away. If you want this, select *Start the application now* on the wizard's last step. When ready, click *Finish*.

   Tip: For an introduction to the Management Client, see Management Client Overview.

Note: Read the License Terms on the Product License Sheet (enclosed with the software DVD) before installing any part of NetEVS.

A failover server is a spare recording server which can take over if a regular recording server becomes unavailable. A failover server is therefore always installed on a separate computer. See more information in Managing Failover Servers.

Important prerequisite: During the installation process you will be asked to specify a user account under which the Failover Server service will run. For the failover solution to work, the user account you specify must have access to your NetEVS system with administrator rights.

1. On the computer on which you will install the failover server, shut down any software running. If upgrading, it is highly recommended that you remove any previous versions of the failover server

before upgrading.

2. With an Internet Explorer browser, connect to the NetEVS Management Server at the following address:

   `http://[Management Server address]:[port]/installation/admin/`

   where [Management Server address] is the IP address or host name of the Management Server, and [port] is the port number which IIS has been set up to use on the Management Server.

   This will open the Management Server's built-in web page. If not accessing the web page on the Management Server itself, log in with an account which has administrator rights on the Management Server.

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Device Pack
© 2010 On-Net Surveillance Systems Inc.
Done
Internet | Protected Mode: Off

3. On the web page find the *Recording Server Installer* section, and then click the *English* link under the required recording server version.

   Note: Depending on your security settings, one or more Windows security warnings may appear after you click the link. If such security warnings appear, accept security warnings by clicking *Run* or similar (exact button text depends on your browser version).

   This will open the *NetEVS Recording Server Setup* wizard, which will guide you through the installation.:

4. On the first step of the wizard, click *Next*.

5. Select installation method *Custom*.

6. Select required installation folder, and then click *Next*.

7. When asked which type of server to install, click the *Failover recording server for temporary ...* icon.

8. Specify failover server setup parameters:

- ***Name*:** A name for the failover server. If required, you can later change the name through the NetEVS Management Client.

- ***NetEVS Management Server*:** The IP address (example: 123.123.123.123) or host name (example: ourserver) of the Management Server to which the failover server should connect when required. If required, you can later change the Management Server IP address/host name as part of the basic administration on the Recording Server service.

- ***MediaDB*:** The path to the failover server's media database. The media database is the failover server's default storage area, i.e. the default location in which recordings from connected cameras are stored in individual camera databases. Once the regular recording server is up and running again, recordings from the failover server will be merged into the relevant databases on the regular recording server.

Click *Next*.

9. A failover server has two services:

   - A *Failover Server* service, which handles the processes of taking over from the regular recording server.

   - A *Recording Server* service, which enables the failover server to act as a recording server while the regular recording server is unavailable.

   The wizard will ask you to select a user account under which the services will run.

   - **How to Select a User Account**

     a. Click the *Browse...* button. This will open the *Select User* window.

     b. In the *Select User* window, verify that the required domain is specified in the *From this location* field. If not, click the *Locations...* button to browse for the required domain.

     c. In the *Enter the object names to select* box, type the required user name.

     Tip: Typing part of a name is often enough. Use the *Check Names* feature to verify that the name you have entered is recognized.

     d. Click *OK*.

     e. Specify the password for the user account in the *Password* field, and confirm the password in the *Confirm password* field.

     Note: The password must contain one or more characters and/or digits.

     f. Click *OK*.

   For the failover solution to work, the user account you specify must have access to your NetEVS system with administrator rights. If the computer acting as failover server is a member of a domain, make sure you specify a user account which belongs to the domain in question. If using network drives, always specify a user account which has access to the network drives in question.

10. Click Install.

11. On the last step of the wizard, click Finish. The failover server is now installed. The failover server has no user interface as such; it is accessed and managed through the Management Client.

If required, repeat the process on other computers to be used as failover servers.

Tip: When the failover server software is installed, you are able to check the state of the failover server's services. See Failover Server Service Administration and Recording Server Service Administration for more information.

The NetEVS Management Server can be installed on multiple servers within a cluster of servers. This ensures that NetEVS has very little down-time: if a server in the cluster fails, another server in the cluster will automatically take over the failed server's job running the NetEVS Management Server. The automatic process of switching over the NetEVS server service to run on another server in the cluster only takes a very short time (up to 30 seconds).

- ### Prerequisites for Installing NetEVS in a Cluster
  - Two or more servers installed in a cluster

    Tip: You can find information about failover clusters in the article *Failover Clusters*found on Microsoft's web site (http://technet.microsoft.com/en-us/library/cc732488(WS.10).aspx).

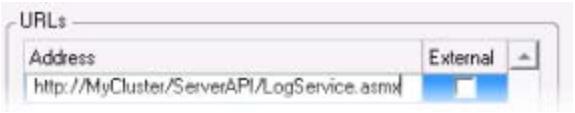
  - External SQL database: the SQL database *must* be installed outside the server cluster
  - Shared network drive, accessible for all servers in the cluster
- ### Installing NetEVS in a Cluster
  1. Install the NetEVS Management Server and all its subcomponents on the first server in the cluster by following the procedures described in the relevant topics.

     Note: The Management Server must be installed with a specific user and not as a *Network Service.* The specific user must have access to the shared network drive.

  2. After you have installed the Management Server and the Management Client on the first server in the cluster, open the Management Client, then from the *Tools* menu select *Registered Services...*

     a. In the *Add/Remove Registered Services* window, select the *Log Service* in the list, then click *Edit...*

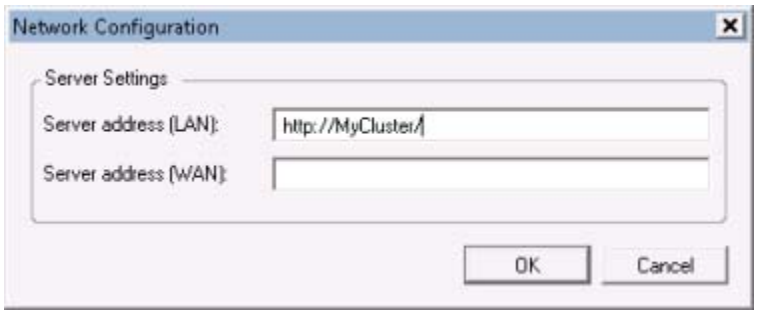
     b. In the *Edit Registered Service* window, change the URL address of the log service to the URL address of the cluster.

     c. Repeat steps a and b for all services listed in the *Add/Remove Registered Services* window.

     d. In the *Add/Remove Registered Services* window, click *Network...*

     e. In the *Network Configuration* window, change the URL address of the server to the URL address of the cluster. (This step only applies to the first server in the cluster.) Click *OK*.



3. Click *Close* in the *Add/Remove Registered Services* window, then exit the Management Client.

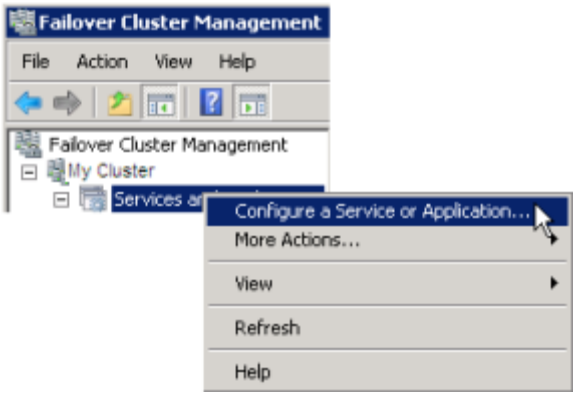
4. Stop the Management Server service.

5. Repeat steps 1-4 for all subsequent servers in the cluster, this time pointing to the existing SQL database, but for the **last** server in the cluster you install the Management Server on, do not stop the Management Server service.

The Management Server service must be configured as a generic service in the failover cluster in order to take effect:

1. On the last server you have installed the Management Server on, open Windows' *Failover Cluster Management*, found under *Administrative Tools* in the *Start* menu.

2. In the *Failover Cluster Management* window, expand your cluster, right-click *Services and Applications*, then select *Configure a Service or Application...*



3. On the first page of the *High Availability Wizard* click *Next*, then on the second page of the wizard select *Generic Service* in the list, and click *Next*.

4. Do not specify anything on the third page of the wizard, click *Next*.

5. Select the *On-Net Surveillance Systems, Inc. NetEVS Management Server* service from the list, then click *Next*.

6. Specify the name that clients will use when accessing the service, then click *Next.*

7. No storage is required for the service, click *Next*.

8. No registry settings should be replicated, click *Next.*

9. Verify that the cluster service is configured according to your needs, then click *Next.*

10. The NetEVS Management Server has now been configured as a generic service in the failover cluster. Click *Finish* to exit the wizard.

Multiple Service Instances

32-bit programs, such as the Recording Server service, can use up to 2 GB of virtual memory. On 32-bit operating systems, this is fine: the operating system kernel reserves 2 GB for itself, and each individual running process is allowed to address up to another 2 GB.

However, if you have a 64-bit operating system and plenty of virtual memory, say 16 GB of RAM, on a server running a single Recording Server service, you will be under-utilizing the server's resources, since the single 32-bit service will still only be able to use up to 2 GB of RAM.

To facilitate better use of virtual memory on servers with 64-bit operating systems and large amounts of RAM, it is therefore possible to install more than one instance of the Recording Server service on the same server.

During the recording server installation, you simply select the required number of instances. By installing several instances of the Recording Server service on a single server, you will be able to make better use of the server's virtual memory—provided that the server runs a 64-bit operating system and that the server is rich on RAM.

Example: On a server with 16 GB of RAM, you would in theory, provided that all the hardware on the server has the necessary capacity, be able to run up to seven instances of the Recording Server service (of the 16 GB, two GB is used by the operating system itself, leaving 14 GB for seven instances of the Recording Server service, each instance using 2 GB).

Note, however, that other processes may also run on the server, in practice leaving less RAM for Recording Server service instances. The number of Recording Server service instances you will be able to run in practice may therefore be lower than the theoretical maximum.

A maximum of 99 recording server instances is allowed on a single server.

Using multiple recording server instances does not require additional licenses.

When using multiple instances of recording servers, you will note a few differences in the Management Client and when managing basic properties of the Recording Server service on the server itself:

- In the Management Client, each recording server instance will be displayed separately, allowing you to configure each instance separately

- When managing the Recording Server service by right-clicking its icon in the notification area on the server itself, you can:

    - Stop and start each instance individually

    - View status messages for each instance individually, grouped on tabs

Troubleshooting

The following issues may occasionally occur during or upon installation of the NetEVS Management Server or recording servers. For each issue, one or more solutions are available.

- **Issue: Automatic IIS Installation for Management Server Fails**

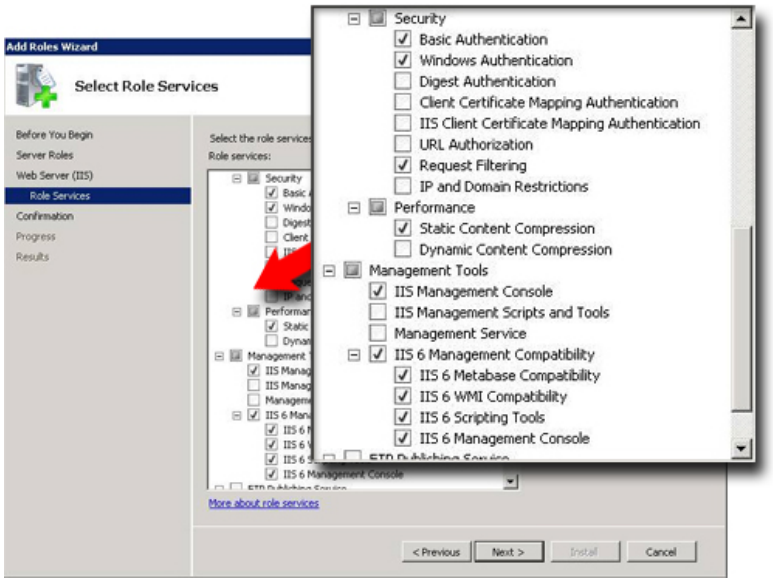
  If installing the Management Server software on a server running Windows 2008 Server, Internet Information Services (IIS) is under normal circumstances automatically installed. This happens

when you click the *Internet Information Services* step in the *NetEVS Management Server Installation* window. If the automatic installation fails, you can install IIS manually.

- **Solution: Install IIS Manually**

  1. If automatic IIS installation fails, you will see an error message asking you to install IIS manually. In the error message box, click the *Install IIS Manually* button.
  2. You will now see the *Server Manager* window. In the left side of the window, select *Roles*, then the *Roles Summary*.
  3. Now select *Add Roles* to start a wizard.
  4. In the wizard, click *Next*, select *Web Server (IIS)*, and follow the wizard's steps.
  5. When you reach the wizard's *Select Role Services* step, you will see that some role services are selected by default. However, you should select some additional role services:
     - Under *Security*, select *Basic Authentication* and *Windows authentication*.
     - Under *Management Tools*, select *IIS 6 Management Console*, expand it, and select *IIS 6 Metabase Compatibility*, *IIS 6 WMI Compatibility*, *IIS 6 Scripting Tools*, and *IIS 6 Management Console*.

     When ready, the relevant part of the *Role services* tree should look like this:



  6. Complete the wizard by following the remaining steps.

- **Issue: Recording Server Startup Fails due to Port Conflict**

  This is an issue if either the Simple Mail Transfer Protocol (SMTP) Service or an existing installation of NetDVMS is running.

Both use port 25. If port 25 is already in use, it may not be possible to start the NetEVS Recording Server service. It is important that port number 25 is available for the recording server's SMTP service since many cameras are only capable of communicating via this port.

SMTP Service: Verification and Solutions

To verify whether SMTP Service is installed, do the following:

1. From Windows' *Start* menu, select *Control Panel*.
2. In the *Control Panel*, double-click *Add or Remove Program*s.
3. In the left side of the Add or Remove Programs window, click Add/Remove Windows Components.
4. In the Windows Components Wizard, select the Internet Information Services (IIS) item, and click the Details… button.
5. In the Internet Information Services (IIS) window, verify whether the SMTP Service check box is selected. If it is, SMTP Service is installed.

If SMTP Service is installed, select one of the following solutions:

- **Solution 1: Disable SMTP Service, or set it to manual startup**
  This solution lets you start the recording server without having to stop the SMTP Service every time:
  1. From Windows' *Start* menu, select *Control Panel*.
  2. In the *Control Panel*, double-click *Administrative Tools*.
  3. In the *Administrative Tools* window, double-click *Services*.
  4. In the *Service*s window, double-click the *Simple Mail Transfer Protocol (SMTP)* item.
  5. In the *Simple Mail Transfer Protocol (SMTP) Properties* window, click *Stop*, and then set *Startup type* to either *Manual* or *Disabled*.

     Tip: When set to *Manual*, the SMTP Service can be started manually from the *Services* window, or from a command prompt using the command “net start SMTPSVC”.
  6. Click OK.
- **Solution 2: Remove SMTP Service**
  Note that removing the SMTP Service may affect other applications using the SMTP service.
  1. From Windows' Start menu, select Control Panel.
  2. In the Control Panel, double-click Add or Remove Programs.
  3. In the left side of the Add or Remove Programs window, click Add/Remove Windows Components.
  4. In the Windows Components Wizard, select the Internet Information Services (IIS) item, and click the Details… button.

5. In the Internet Information Services (IIS) window, clear the SMTP Service check box.

6. Click OK, Next, and Finish.

NetDVMS: Verification and Solutions

To verify whether NetDVMS is installed, do the following:

1. From Windows' *Start* menu, select *Control Panel*.

2. In the *Control Panel*, double-click *Add or Remove Programs*.

3. In the *Add or Remove Programs* window, verify whether NetDVMS appears in the list. If it does, NetDVMS is installed.

If NetDVMS is installed, select one of the following solutions:

- **Solution 1: Remove NetDVMS**

    1. From Windows' *Start* menu, select *Control Panel*.

    2. In the *Control Panel*, double-click *Add or Remove Programs*.

    3. In the *Add or Remove Programs* window, select *NetDVMS*, click the *Change/Remove* button, and then *OK*.

- **Solution 2: Set NetDVMS services to manual startup**
  This solution lets you start the recording server without having to stop the NetDVMS services every time:

    1. From Windows' *Start* menu, select *Control Panel*.

    2. In the *Control Panel*, double-click *Administrative Tools*.

    3. In the *Administrative Tools* window, double-click *Services*.

    4. In the *Services* window, repeat steps a-c in the following for these items:

        - *ImageImportService*
        - *ImageServer*
        - *LogCheckService*
        - *Recording Server*

        a. Double-click the item.

        b. In the *<item> Properties* window, click *Stop*, and then set *Startup type* to *Manual*.

        c. Click *Close* to close the window.

- ### Issue: Changes to SQL Server Location Prevents Database Access

  This is an issue if using an MS SQL Server database as the NetEVS Management Server database: If the location of the SQL Server is changed, for example by changing the host name of the computer running the SQL Server, access to the database will be lost.

  - **Solution: Run Management Server Database Installation Step Again**
    See Management Server Installation. When running the database installation, you will—during the database preparation process—be asked whether you want to create a new database, use an existing database, or overwrite an existing database: Pointing to the new location of the SQL Server, select to use an existing database. This will update the SQL connection string used by the Management Server, and it will again be possible to access the database.

Upgrading

This information is only relevant if you are upgrading a previous installation of NetEVS.

IMPORTANT: NetEVS Management Server no longer supports Microsoft Windows XP Professional. See System Requirements.

The process of upgrading NetEVS involves removing all of its components **except** the Database Server. The Database Server is one of the Management Server's components, it contains the entire system configuration (recording server configurations, camera configurations, rules, etc.). As long as you do not remove the Database Server, you will not need to reconfigure your surveillance system configuration in any way (although you may of course want to configure some of the new features in the new version).

Note: Backward compatibility with recording servers from NetEVS versions older than 3.0 is limited. You can still access recordings on such older recording servers; but in order for you to be able to change their configuration, they must be of version 3.0 or later. It is thus highly recommended that you upgrade all recording servers in your NetEVS system.

- **Prerequisites**
  - Have your **Software License Code (SLC)** ready. The SLC will change when the software version number changes, so you are likely to have received a new SLC when purchasing the new version.
  - Have your **temporary license (.lic) file** ready. The license file will change when your SLC changes, so you are likely to have received a new license file when purchasing the new version. When you install the Management Server installation, the wizard will ask you to specify your SLC (Software License Code) as well as the location of your license (.lic) file, and the system will verify both before you will be able to continue. If you do not have your SLC or license file, contact your surveillance system vendor.
  - Have your **new On-Net Surveillance Systems, Inc. NetEVS version** ready.
  - The Management Server stores your NetEVS system's configuration in a database. The system configuration database can be stored in two different ways: 1) In a SQL Server Express Edition database on the Management Server itself, or 2) in a database on an existing SQL 2005 Server on your network. If using 2), **Administrator rights on the SQL Server** are required whenever you need to create, move or upgrade the Management Server's system configuration database on the SQL Server. Once you are done creating, moving or updating, being database owner of the Management Server's system configuration database on the SQL Server will suffice.
- **Upgrading the Management Server**

  The Management Server has several components. In the following, we will walk through the process of removing the old components—except the Database Server—and installing the new ones:

  1. On the Management Server, stop the Management Server service by right-clicking the Management Server icon in the computer's notification area (also known as the system tray), then selecting *Stop Management Server Service*.
  2. Open Windows' *Add or Remove Programs* dialog (*Start* > *Control Panel* > *Add or Remove Programs*).
  3. In the *Add or Remove Programs* dialog, select the NetEVS Management Server entry, and click the *Change/Remove* button. A wizard window will open. Follow the wizard's

steps, and click *Finish*.

4. Similarly, remove the NetEVS Windows components.

5. If the NetEVS Management Client (in earlier versions called the Manager) is installed on the Management Server itself, remove the Management Client/Manager too.

6. Run the installation file for the new version of NetEVS. After as short while the installation window will open. Out of the 3 installation steps for the Management Server, you will be asked to address step 3 (NetEVS Management Server).

7. Click the installation window's step 3, and complete the NetEVS Management Server installation. During this process you will be asked to specify your SLC and the path to your license (.lic) file.

8. When the Management Server is installed, the Management Server's web page will appear in a browser. If you want to install the Management Client software (in earlier versions called the Manager) on the Management Server itself, you can do if from the Management Server's web page.

- ### Upgrading Recording Servers

Once the new Management Server is installed, you can remove the old recording server version, and install the new one:

What happens to the recording server's recordings? During the removal process, you will be asked whether you want to keep the recording server's recordings.

1. On the recording server, stop the Recording Server service by right-clicking the recording server icon in the computer's notification area (also known as the system tray), then selecting *Stop Recording Server Service*.

2. Open Windows' *Add or Remove Programs* dialog (*Start* > *Control Panel* > *Add or Remove Programs*).

3. In the *Add or Remove Programs* dialog, select the NetEVS Recording Server entry, and click the *Change/Remove* button. A wizard window will open. Follow the wizard's steps, and click *Finish*.

4. Now open a browser and connect to the Management Server's web page at the following address:

   http://[Management Server address]:[port]/installation/admin/

   where [Management Server address] is the IP address or host name of the Management Server, and [port] is the port number which IIS has been set up to use on the Management Server.

   If not accessing the web page on the Management Server itself, log in with an account which has administrator rights on the Management Server.

5. From the web page, install the new version of the recording server software.

6. Repeat for each recording server on your NetEVS system.

- ### Upgrading the Manager / Management Client

  If the Management Client (in earlier versions called the Manager) is installed on separate computers, such as the surveillance system administrator's workstation or similar, you should now remove the old version and install the new one:

  1. On the required computers, open Windows' *Add or Remove Programs* dialog (*Start* > *Control Panel* > *Add or Remove Programs*).

  2. In the *Add or Remove Programs* dialog, select the NetEVS Management Client/Manager entry, and click the *Change/Remove* button. A wizard window will open. Follow the wizard's steps, and click *Finish*.

  3. Now open a browser and connect to the Management Server's web page at the following address:

     http://[Management Server address]:[port]/installation/admin/

     where [Management Server address] is the IP address or host name of the Management Server, and [port] is the port number which IIS has been set up to use on the Management Server.

     If not accessing the web page on the Management Server itself, log in with an account which has administrator rights on the Management Server.

  4. From the web page, install the new version of the Management Client.

- ### Upgrading Ocularis Client Lite

  Ocularis Client Lite users should now remove their old Ocularis Client Lite versions and install the new one:

  1. On the required computers, open Windows' *Add or Remove Programs* dialog (*Start* > *Control Panel* > *Add or Remove Programs*).

  2. In the *Add or Remove Programs* dialog, select the Ocularis Client Lite entry, and click the *Remove* button. A wizard window will open. Follow the wizard's steps, and click *Finish*.

  3. Now open a browser and connect to the Management Server's web page at the following address:

     http://[Management Server address]:[port]/installation/

     where [Management Server address] is the IP address or host name of the Management Server, and [port] is the port number which IIS has been set up to use on the Management Server.

  4. From the web page, install the new version of Ocularis Client Lite.

Services: Basic Administration

Management Server Service

When the NetEVS Management Server software is installed, you are able to check the state of the NetEVS Management Server service by looking at the *NetEVS-Server* service icon in the notification area *of the computer running the Management Server*. The notification area icon also lets you start and stop the Management Server service, view status messages, etc.

Tip: The notification area is occasionally also known as the *system tray*, it is located at the far right of the Management Server computer's Windows taskbar.

Example: Management Server service icon in notification area

- **Management Server Service State Icons**

  The following notification area icons represent the states of the On-Net Surveillance Systems, Inc. Management Server service:

  Management Server service is running. To stop a running Management Server service, right-click the icon and select *Stop Management Server Service*.

  Management Server service is stopped. To start the Management Server service, right-click the icon and select *Start Management Server Service*.

  Management Server service is starting. Appears when the Management Server service is in the process of starting. Under normal circumstances, the icon will after a short while change to *Management Server is running*.

  Management Server service is stopping. Appears when the Management Server service is in the process of stopping. Under normal circumstances, the icon will after a short while change to *Management Server is stopped*.

- **Starting the Management Server Service**

  1. Right-click the notification area's NetEVS-Server service icon.
  2. From the menu that appears, select *Start Management Server Service*.

- **Stopping the Management Server Service**

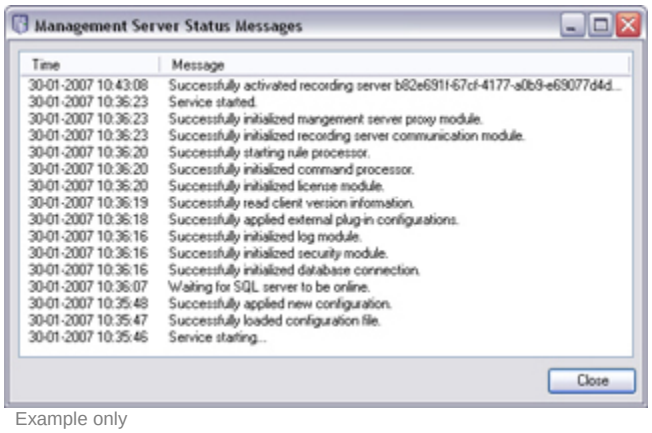
  Note: You cannot use the NetEVS Management Client while the NetEVS Management Server service is stopped.

  1. Right-click the notification area's NetEVS-Server service icon.
  2. From the menu that appears, select *Stop Management Server Service*.

- ## Viewing Status Messages

1. Right-click the notification area's NetEVS-Server service icon.

2. From the menu that appears, select *Show Status Messages*. The *Management Server Status Messages* window appears, listing time-stamped status messages:


Management Server Status Messages
Time
Message
30-01-2007 10:43:08 Successfully activated recording server b82e691f-67cf-4177-a0b9-e69077d4d...
30-01-2007 10:36:23 Service started.
30-01-2007 10:36:23 Successfully initialized mangement server proxy module.
30-01-2007 10:36:23 Successfully initialized recording server communication module.
30-01-2007 10:36:20 Successfully starting rule processor.
30-01-2007 10:36:20 Successfully initialized command processor.
30-01-2007 10:36:20 Successfully initialized license module.
30-01-2007 10:36:19 Successfully read client version information.
30-01-2007 10:36:18 Successfully applied external plug-in configurations.
30-01-2007 10:36:16 Successfully initialized log module.
30-01-2007 10:36:16 Successfully initialized security module.
30-01-2007 10:36:16 Successfully initialized database connection.
30-01-2007 10:36:07 Waiting for SQL server to be online.
30-01-2007 10:35:48 Successfully applied new configuration.
30-01-2007 10:35:47 Successfully loaded configuration file.
30-01-2007 10:35:46 Service starting...
Close
Example only

- ## Viewing Version Information

Knowing the exact version of your NetEVS Management Server service is an advantage if you need to contact product support.

1. Right-click the notification area's NetEVS-Server service icon.

2. From the menu that appears, select *About...*

3. A small dialog opens. The dialog will show the exact version of your NetEVS Management Server service.

Recording Server Service

When the NetEVS Recording Server software is installed, you are able to check the state of the Recording Server service by looking at the NetEVS Recording Server service icon in the notification area of the computer running the recording server in question. The notification area icon also lets you start and stop the Recording Server service, view status messages, etc.

Tip: The notification area is occasionally also known as the *system tray*, it is located at the far right of the recording server's Windows taskbar.

Example: Recording Server service icon in notification area

- #### Recording Server Service State Icons

  The following icons represent the states of the NetEVS Recording Server service:

  Recording Server service is running. To stop a running Recording Server service, right-click the icon and select *Stop Recording Server Service*.

  Recording Server service is stopped. To start the Recording Server service, right-click the icon and select *Start Recording Server Service*.

  Recording Server service is starting. Appears when the Recording Server service is in the process of starting. Under normal circumstances, the icon will after a short while change to *Recording server is running*.

  Recording Server service is stopping. Appears when the Recording Server service is in the process of stopping. Under normal circumstances, the icon will after a short while change to *Recording server is stopped*.

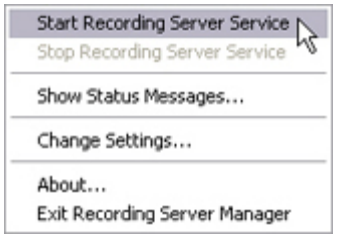
  Indeterminate state. Appears when the Recording Server service is initially loaded and until the first state information is received, upon which the icon will under normal circumstances change to the *Recording server is starting* icon, and subsequently to the *Recording server is running* icon.

  Recording Server service is running offline. Typically appears when the Recording Server service is running but the Management Server service is not.

  Recording Server must be authorized by administrator. Appears when the Recording Server service is loaded for the first time. Administrators authorize the recording server through the NetEVS Management Client: In the Management Client's navigation pane, expand the *Servers* list, select the *Recording Server* node then in the overview pane right-click the required recording server and select *Authorize Recording Server*.

- ## Starting the Recording Server Service

1. Right-click the notification area's recording server icon.
2. From the menu that appears, select *Start Recording Server Service*:



If using multiple instances of the Recording Server service, a sub-menu lets you select whether you want to start a particular instance or all instances.

- ## Stopping the Recording Server Service

Note: While the NetEVS Recording Server service is stopped, NetEVS will not be able to interact with devices connected to the recording server. Consequently, no live viewing or recording will be possible.

1. Right-click the notification area's recording server icon.
2. From the menu that appears, select *Stop Recording Server Service*:

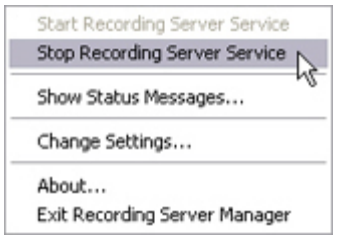
If using multiple instances of the Recording Server service, a sub-menu lets you select whether you want to stop a particular instance or all instances.

- ## Changing Basic Recording Server Settings

To change basic settings for the NetEVS Recording Server service, such as which port numbers to use, do the following:

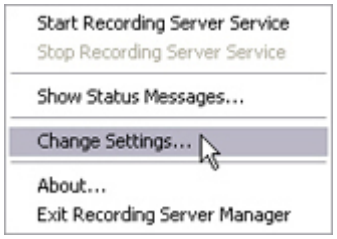
Note: In order to be able to change settings, the NetEVS Recording Server service must be stopped. While the Recording Server service is stopped, NetEVS will not be able to interact with devices connected to the recording server. Consequently, no live viewing or recording will be possible.

1. Right-click the notification area's recording server icon.
2. From the menu that appears, select *Stop Recording Server Service*:



3. Right-click the notification area's recording server icon again.

4. From the menu that appears, select *Change Settings...*:



The *Recording Server Settings* window appears. You are able to change the following settings:

- **Management Server hostname / IP address:** Lets you specify the IP address (example: 123.123.123.123) or host name (example: ourserver) of the NetEVS Management Server to which the recording server should be connected. This information is necessary in order for the recording server to be able to communicate with the Management Server.

- **Management Server port:** Lets you specify the port number to be used when communicating with the NetEVS Management Server. Default is port 9993, although you are able to change this if required.

- **Web server port:** Lets you specify the port number to be used for handling web server requests, for example for handling PTZ camera control commands and for browse and live requests from Ocularis Client Lite. Default is port 7563, although you are able to change this if required.

- **Alert server port:** Lets you specify the port number to be used when the recording server listens for alert socket/TCP information (some devices use TCP (alert socket) for sending event messages). Default is port 5432, although you are able to change this if required.

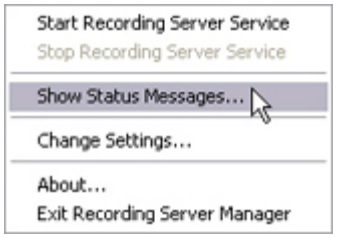
- **SMTP server port:** Lets you specify the port number to be used when the recording server listens for SMTP information (some devices use SMTP (e-mail) for sending event messages). Default is port 25, although you are able to change this if required.

- **FTP server port:** Lets you specify the port number to be used when the recording server listens for FTP information (some devices use FTP for sending event messages. Default is port 21, although you are able to change this if required.

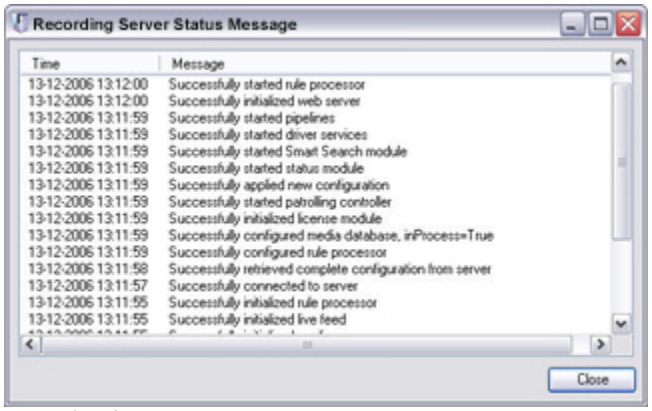
- ## Viewing Status Messages

1. Right-click the notification area's recording server icon.

2. From the menu that appears, select *Show Status Messages*:



The *Recording Server Status Messages* window appears, listing time-stamped status messages:


Recording Server Status Message
Time
Message
13-12-2006 13:12:00 Successfully started rule processor
13-12-2006 13:12:00 Successfully initialized web server
13-12-2006 13:11:59 Successfully started pipelines
13-12-2006 13:11:59 Successfully started driver services
13-12-2006 13:11:59 Successfully started Smart Search module
13-12-2006 13:11:59 Successfully started status module
13-12-2006 13:11:59 Successfully applied new configuration
13-12-2006 13:11:59 Successfully started patrolling controller
13-12-2006 13:11:59 Successfully initialized license module
13-12-2006 13:11:59 Successfully configured media database, inProcess=True
13-12-2006 13:11:59 Successfully configured rule processor
13-12-2006 13:11:58 Successfully retrieved complete configuration from server
13-12-2006 13:11:57 Successfully connected to server
13-12-2006 13:11:55 Successfully initialized rule processor
13-12-2006 13:11:55 Successfully initialized live feed
Close

Example only

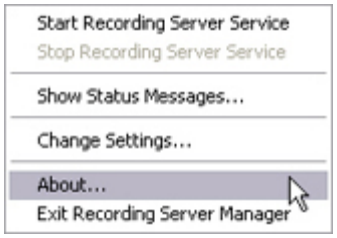
If using multiple instances of the Recording Server service, status messages for individual instances are grouped on tabs.

- ## Viewing Version Information

Knowing the exact version of your On-Net Surveillance Systems, Inc. Recording Server service is an advantage if you need to contact product support.

1. Right-click the notification area's recording server icon.

2. From the menu that appears, select *About...*:

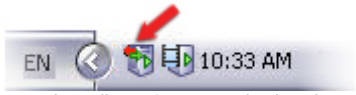


3. A small dialog opens. The dialog will show the exact version of your Recording Server service.

Failover Server Service

When you have installed a failover server, you are able to check the state of the NetEVS Failover Server service by looking at the NetEVS Failover Server service icon in the notification area *of the computer running the failover server*. The notification area icon also lets you start and stop the Failover Server service, view status messages, etc.

Tip: The notification area, also known as the *system tray*, it is located at the far right of the Management Server computer's Windows taskbar.



Example: Failover Server service icon in notification area; note that failover servers also have a Recording Server service (other icon)

- **Failover Server Service State Icons**

  The following icons represent the states of the NetEVS Failover Server service:

  Failover Server service is enabled and started. The failover server must be enabled through the Management Client (see Managing Failover Servers), and the service must be started, in order for the failover server to be able to take over from regular recording servers.

  Failover Server service is stopped. To start the Failover Server service, right-click the icon and select *Start Failover Server Service*.

  Failover Server service is starting. Appears when the Failover Server service is in the process of starting. Under normal circumstances, the icon will after a short while change to *Failover Server service is enabled and started*.

  Failover Server is disabled or running offline. Typically appears if:

  - the failover server is not enabled through the Management Client; see Managing Failover Servers.
  - the Failover Server service is running but the Management Server service is not
  - the failover server's information about the Management Server address is incorrect (see *Changing the Management Server Address* below for more information)
  - the user account under which the Failover Server service runs has no access to your NetEVS system. **How to troubleshoot this ...**

    During installation of the failover server, you specified a user account under which the Failover Server service should run. For the failover server to work, it is important that the user account in question has access to your NetEVS system with administrator rights.

    To verify whether the user account has access to your NetEVS system, do the following:

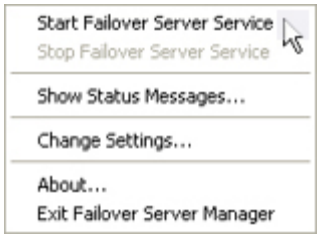
    1. In the NetEVS Manager's navigation pane, expand *Security* and select *Roles*.
    2. In the overview pane's roles list, select the *Administrators* role.
    3. In the properties pane's role settings list, verify that the required user is listed.

If the user is not listed, add the required user to the *Administrators* role by clicking the *Add...* button below the role settings list. For more information, see Assigning Users & Groups to a Role.

- ## Starting the Failover Server Service

The On-Net Surveillance Systems, Inc. Failover Server service starts automatically. If you have stopped the service manually, you can start it the following way:

1. Right-click the notification area's failover server icon.
2. From the menu that appears, select *Start Failover Server Service*:



- ## Stopping the Failover Server Service

Note: While the NetEVS Failover Server service is stopped, the failover server will not be able to take over from regular recording servers.

1. Right-click the notification area's Failover Server service icon.
2. From the menu that appears, select *Stop Failover Server Service.*

- ## Changing the Management Server Address

The failover server must be able to communicate with your NetEVS system's Management Server. You therefore specify the IP address/hostname of the Management server during the installation of the failover server.

Should you later need to change the address of the Management Server, you do it the following way:

Note: In order to be able to change the Management Server address, the NetEVS Failover Server service must be stopped. While the Failover Server service is stopped, the failover server will not be able to take over from regular recording servers.

1. Right-click the notification area's failover Server service icon.
2. From the menu that appears, select *Stop Failover Server Service.*
3. Right-click the notification area's Failover Server service icon again.
4. From the menu that appears, select *Change Settings...* The *Failover Recording Server Settings* window appears. You are able to change the following setting:

    - **Management Server hostname / IP address:** Lets you specify the IP address (example: 123.123.123.123) or host name (example: ourserver) of the NetEVS Management Server with which the failover server should be able to communicate.

- ### Viewing Status Messages

  1. Right-click the notification area's NetEVS Failover Server service icon.

  2. From the menu that appears, select *Show Status Messages.* The *Failover Recording Server Status Messages* window appears, listing time-stamped status messages.

- ### Viewing Version Information

  Knowing the exact version of your NetEVS Failover Server service is an advantage if you need to contact product support.

  1. Right-click the notification area's Failover Server service icon.

  2. From the menu that appears, select *About...*

  3. A small dialog opens. The dialog will show the exact version of your Failover Server service.

Download Manager: Components Availability

The NetEVS Management Server has a built-in web page. The web page enables administrators and end users to download and install required surveillance system components from any location, locally or remotely.

The web page is capable of displaying two sets of content:

- One targeted at system administrators, enabling them to download and install key NetEVS components, such as recording servers and the Management Client. This is the content you see during the NetEVS installation process.

- One targeted at end users, providing them with access to client applications, such as Ocularis Client Lite.

The example to the right shows the web page displaying content targeted at system administrators.

The web page automatically has some content; this is why you can use it immediately during the NetEVS installation process. However, as a system administrator, you can customize what should be displayed on the web page, for example if particular language versions of Ocularis Client Lite are required in your organization. For this purpose you use the Download Manager.

- ### Accessing the Download Manager

  You access the Download Manager on the server running the Management Server software: In Windows' *Start* menu, select *All Programs > NVR Download Manager > NVR Download Manager*.

- ### Download Manager Is Not User Rights Management Tool

  The Download Manager lets you control which components users are able to download and install. However, it is important to know that the Download Manager cannot be used for managing users' rights to use the components. Such rights are determined by roles; you define roles in the Management Client.

- ### Default Configuration of Download Manager and Web Page

  The Download Manager has a default configuration. This ensures that your organization's users can access standard features without you having to set up anything.

  - The default configuration provides **administrators** with access to downloading recording servers, the Management Client, and video device drivers. This content is displayed when the web page is automatically loaded at the end of the Management Server installation as well as when the web page is accessed by entering the URL

    http://[Management Server address]:[port]/installation/admin/

    where [Management Server address] is the IP address or host name of the Management Server, and [port] is the port number which IIS has been set up to use on the Management Server. If not accessing the web page on the Management Server itself, log in with an account which has administrator rights on the Management Server.

  - The default configuration provides **end users** with access to downloading Ocularis Client Lite. The application will by default be available in a language version matching the

language version of your NetEVS installation. This content is displayed when the web page is accessed by entering the URL

```
http://[Management Server address]:[port]/installation/
```

where [Management Server address] is the IP address or host name of the Management Server, and [port] is the port number which IIS has been set up to use on the Management Server.

Download Manager's Tree Structure Explained

The first level of the tree structure simply indicates that you are working with NetEVS.

The second level refers to the 2 targeted versions of the web page. *Default* refers to the web page version viewed by end users. *Admin* refers to the web page version viewed by surveillance system administrators.

The third level refers to the languages in which the web page is available.

The fourth level refers to the components which are—or can be made—available to users.

The fifth level refers to particular versions of each component, which are—or can be made—available to users.

The sixth level refers to the language versions of the components which are—or can be made—available to users.

The fact that only standard components are initially available—and only in the same language version as the surveillance system itself—helps reduce installation time and save space on the server. There is no need to have a component or language version available on the server if nobody is going to use it.

You can, however, make more components and/or languages available as required. See Making New Components Available below for more information. Likewise, you can hide or remove unwanted components and/or languages; see Hiding and Removing Components below.

- **Examples of Components You Can Control Through the Download Manager**
  - Recording servers (including failover servers; failover servers are initially downloaded and installed as recording servers, during the installation process you specify that you want a failover server)
  - Management Client
  - Video device drivers (for use on recording servers)
  - Ocularis Client Lite
  - Language packs for Ocularis Client Lite (allowing users to add additional languages to their Ocularis Client Lite software)
  - Various plugins (downloading such plugins can be relevant if your organization uses add-on products (such as video analytics or transaction management solutions) with NetEVS.
  - More options may be available in your organization

- **Making New Components Available**
  Making new components—including new language versions—available to your organization's users involves 2 procedures: First you install the required components on the Management Server. You then use the Download Manager to fine-tune which components should be available in the various language versions of the web page.

Installing New Components on Management Server

If the Download Manager is open, close it before installing new components on the Management Server.

Installation files for additional components, for example Ocularis Client Lite language versions, language packs, etc., are by default available on your Management Server in a folder called *Installers.* The Installers folder is located in the Management Server software installation folder.

To install a component from the *Installers* folder you may—depending on the type of component—need to select the required language sub-folder. Then you double-click the required installation (.exe) file.

When a new component has been installed on the Management Server, you will see a confirmation dialog.

Making New Components Available through the Download Manager

When you have installed new components—such as Ocularis Client Lite language versions, language packs, etc.—they will by default be selected in the Download Manager, and thus immediately be available to users via the web page.

You can always show or hide features on the web page by selecting or clearing check boxes in the Download Manager's tree structure.

Tip: You can change the sequence in which components are displayed on the web page: In the Download manager's tree structure, simply drag component items and drop them at the required position.

- **Moving Components Between Web Page Versions**
  You are able to move components between the two versions of the web page, i.e. between the one targeted at system administrators and the one targeted at end users.

  To move a component, simply right-click it, and select the web page version you want to move the component to.

- **Hiding and Removing Components**
  You have 3 options:

  - You can **hide component**s from the web page by clearing check boxes in the Download Manager's tree structure. In that case, the components will still be installed on the Management Server, and by selecting check boxes in the Download Manager's tree structure you can quickly make the components available again.

  - You can **remove components** which have previously been made available through the Download Manager. This will remove the installation of the components on the Management Server. The components will disappear from the Download Manager, but installation files for the components will be kept in the Managements Server's *Installers* folder, so you can re-install them later if required.

1. In the Download Manager, click the *Remove features...* button.
2. In the *Remove Features* window, select the features you want to remove.
3. Click *OK*. You will be asked to confirm that you want to remove the selected features. If you are sure, click the *Yes* button.

- You can **remove installation files for non-required features** from the Management Server. This can help you save disk space on the server if you know that your organization is not going to use certain features—typically non-relevant language versions. See Non-Required Components Removal from Management Server for more information.

- **Virus Scanning Information**
  If you are using virus scanning software on the Management Server, it is likely that the virus scanning will use a considerable amount of system resources on scanning data from the Download Manager. If allowed in your organization, disable virus scanning on the Management Server. For more information see Virus Scanning Information.

Management Client: System Administration

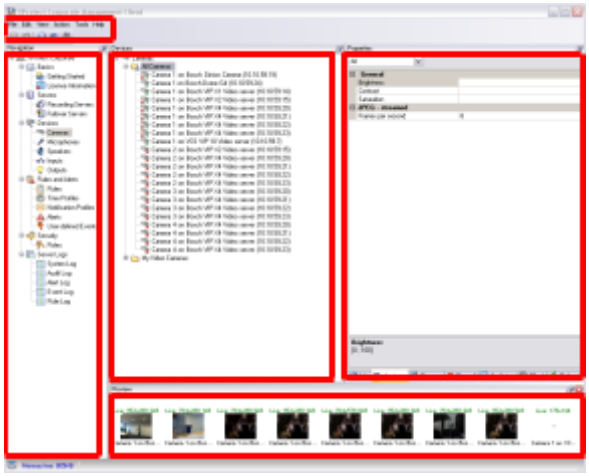
The Management Client, *NetEVS-Manager*, is the feature-rich administration client used for configuration and day-to-day administration of your NetEVS system. The Management Client software is typically installed on the surveillance system administrator's workstation or similar.

- ## Management Client's Elements

  The Management Client, *NetEVS-Manager*, window is divided into a number of panes. The number of panes will change depending on your task:

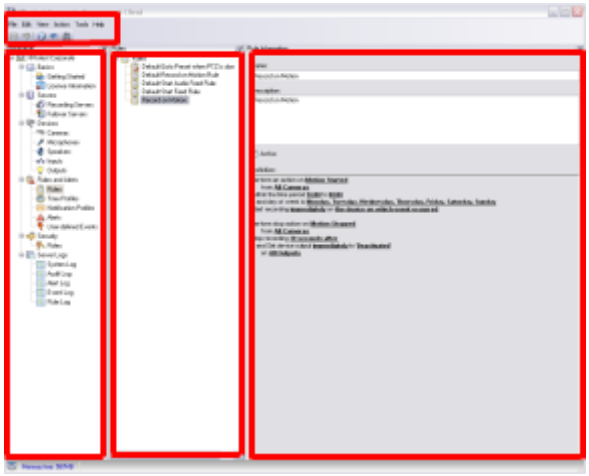
  Note: The following illustrations outline the Management Client window's default layout; the window layout can be customized, and may therefore be different on your computer.

  - When working with recording servers and devices (cameras, inputs, outputs), the Management Client window will contain a menu bar and up to 4 panes:

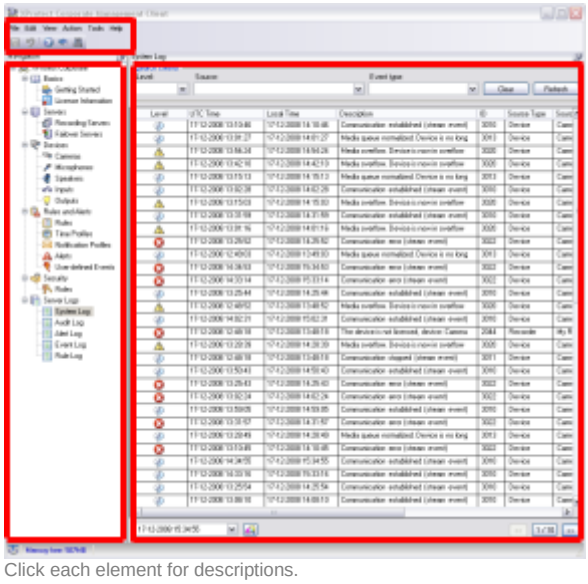
    Click each element for descriptions.

  - When working with rules, time and notification profiles, users, roles, etc., the Management Client window typically contains a menu bar and 3 panes:

    Click each element for descriptions.

- When viewing logs, the Management Client window typically contains only the menu bar and 2 panes:



Click each element for descriptions.

- ## Navigation Pane

The navigation pane is your main navigation element in the Management Client. In the navigation pane, the Management Client's features are grouped into the following categories:

- ***Basics***: General information, for example about licenses in your NetEVS system
- ***Servers***: Management of recording servers and failover servers (spare recording servers) connected to your NetEVS system
- ***Devices***: Management of cameras, microphones, speakers, inputs, and outputs
- ***Rules and Alerts***: Management of rules, time profiles, notification profiles, and alerts
- ***Security***: Management of roles, users, and groups.
- ***Server Logs***: Access to the various logs of your NetEVS system

Tip: Right-clicking items in the navigation pane gives quick access to management features.

- ## Menu Bar

The Management Client's menu bar features the following menus:

- File Menu
- Edit Menu
- View Menu
- Action Menu

- Tools Menu
- Help Menu

- **Toolbar**

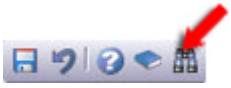
The Management Client's toolbar features the following options:

***Save*:** Lets you save changes to your settings.

***Undo*:** Lets you undo your latest change.

***Help...*:** Lets you access a help topic relevant to your task

***Contents...*:** Lets you access the help system's table of contents.



***Search...*:** Lets you access the help system's search feature.

Tip: Read more about the Management Client's built-in help system in Using the Built-in Help System.

- **Memory Indicator**

The memory indicator located in the lower left corner of the Management Client states how much memory is available for working with the Management Client.

When you expand items in the navigation pane the Management Client uses memory to treat data stored in the individual items. Expanded items keep processing even when you expand other items in the navigation pane, thus letting you access already-expanded items faster.

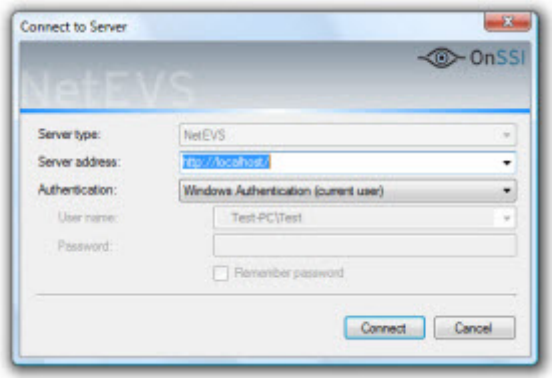
When available memory drops to 300 MB the memory indicator numbers turn red:

When the memory indicator drops to 0 MB, meaning there is no more memory available for the Management Client, you cannot expand any more items and you will see a warning dialog.

To free up memory, refresh the Management Client: Click *OK* to exit the dialog, then press F5 on your keyboard or select *Refresh* from the *Action* menu.

Note: Access to the NetEVS Management Client requires certain user rights. Consult your surveillance system administrator for more information.

1. Click the *NetEVS Manager* desktop icon or—in Windows' *Start* menu—select *All Programs* > *OnSSI* > *NetEVS* > *NetEVS-Manager*. This will make the login window appear:



Management Client login window

2. The login window's *Server type* field will in many cases appear dimmed and pre-filled with the required information. If not, select *NetEVS*.

3. In the *Server address* field, type the IP address or host name of the computer running the NetEVS Management Server.

   Tip: If you have logged in before, you can select previously used server IP addresses or host names from the list.

4. By default, you will log in to the Management Server with your active Windows account. This means that if you are currently logged in as, for example, *JohnSmith*, you will by default log in to the Management Server as *JohnSmith* as well.

   - If you wish to log in to the Management Server with your active Windows account (this is the default login option), select *Windows Authentication (current user)* in the *Authentication* field.

   - If you wish to log in to the Management Server with a different Windows account, select *Windows Authentication* in the *Authentication* field, then type the required user name and password in the *User name* and *Password* fields respectively.

     Tip: If you have logged in with *Windows Authentication* before, you can select previously entered user names from the list.

     Tip: When using *Windows Authentication*, you have the option of selecting *Remember password*, in which case you will not have to type the password at subsequent logins.

5. Click the *Connect* button to open Management Client, *NetEVS-Manager*.

In the following, the tasks typically involved in setting up an NetEVS system are listed.

Note that although information is presented as a checklist, a completed checklist does not in itself guarantee that the NetEVS system will match the exact requirements of your organization. To make the system match the needs of your organization, it is highly recommended that you monitor and adjust the system once it is running.

For example, it is often a good idea to spend time on testing and adjusting the motion detection sensitivity settings of individual cameras under different physical conditions (day/night, windy calm weather, etc.) once the system is running. The setup of rules, which determine most of the actions performed by the NetEVS system (including when to record video), is another example of configuration which to a very large extent depends on your organization's needs.

☑ **Install the various components of your NetEVS system**. See Installation Overview.

☑ **Log in to the Management Client**. See Logging in to the Management Client.

☐ **Authorize use of your NetEVS system's recording servers.** See Managing Recording Servers.

> **Why must I authorize recording servers?** By authorizing recording servers before they can be used, surveillance system administrators have full control over which recording servers are able to send information to their NetEVS Management Server.

☐ **Detect the hardware devices (i.e. cameras and video encoders) which should be added to each recording server.** See Hardware Detection Wizard.

> **What is the Hardware Detection Wizard?** The *Hardware Detection Wizard* helps you detect IP hardware devices, such as cameras and video encoders, on your network and add them to your NetEVS system. The wizard offers you 2 ways of detecting and adding hardware devices: With *automatic hardware detection*, NetEVS automatically scans for available hardware within one or more specified IP address ranges. With *assisted hardware detection*, you manually specify the IP address of each required device. Both options offer the possibility of automatically detecting the correct hardware drivers.

☐ **Verify that each recording server's storage areas will meet your needs.** See Recording Server Database Management.

> **What is a storage area?** A storage area is a directory in which the databases containing recordings from the cameras connected to the recording server are stored—each individual camera database by default has a maximum size of 5 GB. A default storage area is automatically created for each recording server when the recording server is installed on the system. Connected cameras' databases are stored in the recording server's default storage area unless you specifically define that another storage area should be used for storing the databases of particular cameras. If required, a wizard lets you add further storage areas (on the recording server computer itself, or at another location, for example on a network drive), edit which storage area should be the default area, etc.

☐ **Verify that each recording server's archiving settings will meet your needs.** See About Archiving.

> **What is archiving?** Archiving is the automatic transfer of recordings from a camera's default database to another location. This way, the amount of recordings you are able to store will not be limited by the size of the camera's default database. Archiving also makes it possible to back up your recordings on backup media of your choice. Archiving is configured on a per-recording server basis. Once you have configured the archiving settings for a recording server (where to store archives, how often to transfer recordings to the archives, etc.), you can enable archiving for individual cameras. When archiving is enabled for a camera, the contents of the camera's database will automatically be moved to an archive at regular intervals.

☐ **Configure any required failover servers.** A failover server is a spare recording server which can take over if a regular recording server becomes unavailable. See About Failover Servers.

☐ **Configure each recording server's individual cameras.** See Managing Cameras.

Tip: You are able to group cameras, and configure common properties for all cameras within a group in one step.

Tip: Motion detection, a vital setting on most IP surveillance systems, is enabled by default. However, you may want to fine-tune motion detection settings, or disable motion detection for particular cameras.

☐ **Enable and configure microphones—if any.** See About Microphones.

☐ **Enable and configure speakers—if any.** See About Speakers.

☐ **Enable and configure input—if any.** See About Inputs.

☐ **Enable and configure output—if any.** See About Outputs.

☐ **Create rules.** See About Rules.

What is a rule? Rules are a central element in NetEVS. The behavior of an NetEVS system is to a very large extent determined by rules. Rules determine highly important settings, such as when cameras should record, when PTZ (Pan/Tilt/Zoom) cameras should patrol, when notifications should be sent, etc.

Tip: When creating rules, you may also want to use time profiles (for quickly making rules apply within or outside predefined periods of time) or notification profiles (for quickly making rules send pre-configured e-mails—with video clips, if required—to selected recipients).

☐ **Add roles.** See About Roles.

What is a role? Roles determine which NetEVS features users and groups are able to use. In other words, roles determine rights.

☐ **Add users and/or groups of users.** See About Users and Groups.

Tip: If you have a server with Active Directory installed, and acting as domain controller on your network, NetEVS lets you quickly add users and/or groups from Active Directory.

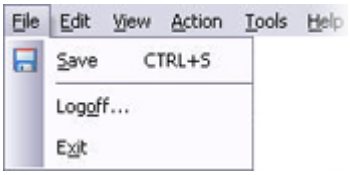
☐ **Activate licenses.** See About Licensing.

Why must licenses be activated? When installing the system, you used a single temporary license. The temporary license is only valid for a certain number of days. After this initial period ends, all recording servers and cameras on your system will require activation of their individual licenses. You must therefore activate your licenses before the initial period ends, since all recording servers and cameras for which no licenses have been activated will otherwise stop sending data to the surveillance system.

☐ **Use the Download Manager to make additional components available to users—if required.** See Using the Download Manager.

What is the Download Manager? An application which lets surveillance system administrators manage which system-related components (e.g. particular language versions of clients) surveillance system users will be able to access from a targeted web page generated by the Management Server.

Management Client's Menus



The *File* menu features three commands:

- ***Save***: Lets you save your current configuration.

  Tip: As an alternative to selecting *File* > *Save*, press CTRL+S on your keyboard.

- ***Logoff...***: Lets you log out of the *NetEVS-Manager* Management Client, and log in with another user account if necessary.

- ***Exit***: Lets you close down and exit the Management Client.

The *Edit* menu features a single command:

- ***Undo*** lets you cancel your latest action.

  Tip: As an alternative to selecting *Edit* > *Undo*, press CTRL+Z on your keyboard.

The *View* menu features up to 3 commands, depending on context:

- ***Reset Application Layout*** lets you reset the layout of the different panes in the Management Client to their default settings. This is useful if you have moved, resized, or auto-hidden panes and want to return to the standard layout. After selecting *Reset Application Layout* you must restart the application to restore the standard layout.

- ***Preview Window*** lets you toggle the preview pane on and off when working with recording servers and devices.

  Tip: If the preview pane displays images from many cameras at a high frame rate, it may slow down performance. To specify the number of preview images you want in your preview pane, as well as their frame rate, select *Options* > *General* from the *Tools* menu.

- ***Show Recording Streams*:** By default, the information shown with preview images in the preview pane will concern cameras' live streams (shown in green text). If you want information about recording streams instead, select *Show Recording Streams*. Recording stream information will be shown in red text.

File Edit View Action Tools Help
Add New Device Group... CTRL+N
Edit Device Group Members
Delete Device Group DELETE
Rename Device Group F2
Go To Hardware...
Refresh F5
Example only; *Action* menu changes depending on context

The *Action* menu's content depends on your selection in the navigation pane and therefore the type of work you are doing. The content of the *Action* menu corresponds to the menu shown when you right-click an element in the navigation pane.

- ***Refresh*** is always available and reloads the requested information from the Management Server. Especially useful when 2 or more administrators are working with the surveillance system at the same time.

- ***Expand*** (or *Collapse*) is available when working with Servers, Devices, Client, Rules and Alerts.

Commands available when working with...

- ### Licensing

  The Action menu features commands concerning license activation.

  - ***Activate License Offline*** lets you activate and update you license by exporting a license request file and afterwards importing an updated license file.

  See Activating Licenses for more information.

- ### Recording Servers

  The *Action* menu features 5 commands concerning recording servers.

  - ***Hardware Detection Wizard*** helps you detect IP hardware devices, such as cameras, on your network and add them to your NetEVS system. See Hardware Detection Wizard for more information.

  - ***Delete All Hardware*** lets you quickly delete all hardware on a selected recording server. See Managing Recording Servers for more information.

  - ***Rename Recording Server*** lets you change the name of a selected recording server. See Managing Recording Servers for more information.

  - ***Remove Recording Server*** lets you remove a selected recording server from the Management Client. The configuration of the cameras connected to the removed recording server will be removed as well. See Managing Recording Servers for more information.

  - ***Authorize Recording Server*** lets you authorize newly added recording servers prior to first use. See Managing Recording Servers for more information.

- ### Cameras, Microphones, Speakers, Input & Output

  The *Action* menu features 5 commands for use when working with devices.

- ***Add New Device Group...*** lets you define a new group of devices for group-based management.
- ***Edit Device Group Members*** lets you specify and edit which devices are members of a device group.
- ***Delete Device Group*** lets you delete an existing device group.
- ***Rename Device Group*** lets you change the name of an existing device group.
- ***Go To Hardware...*** lets you see the properties and a preview of the selected device. See Managing Recording Servers for more information.

- **View Groups**

  The *Action* menu features three commands concerning view groups.

  - ***Add New View Group...*** lets you create a new view group.
  - ***Delete View Group*** lets you delete a view group.
  - ***Rename View Group*** lets you rename a view group.

- **Matrix**

  The *Action* menu features three commands concerning Matrix.

  - ***Add New Matrix...*** lets you create a new Matrix.
  - ***Delete Matrix*** lets you delete a Matrix.
  - ***Rename Matrix*** lets you rename a Matrix.

- **Rules**

  The *Action* menu features 7 commands concerning rules.

  - ***Add New Rule...*** lets you create a new rule.
  - ***Edit Rule...*** lets you edit an existing rule.
  - ***Delete Rule*** lets you delete a rule.
  - ***Rename Rule*** lets you rename a rule.
  - ***Copy Rule...*** lets you copy a rule so you can re-use the content of the rule.
  - ***Validate Rule*** lets you validate the content of an individual rule.
  - ***Validate All Rules*** lets you validate the content of all existing rules.

- **Time Profiles**

  The *Action* menu features 4 commands concerning time profiles.

- ***Add New Time Profile...*** lets you create a new time profile.
- ***Edit Time Profile...*** lets you edit an existing time profile.
- ***Delete Time Profile*** lets you delete a time profile.
- ***Rename Time Profile*** lets you rename an existing time profile.

- **Notification Profiles**

  The *Action* menu features three commands concerning notification profiles.

  - ***Add New Notification Profile...*** lets you create a new notification profile, for instance for sending out notification e-mails if certain events occur.
  - ***Delete Notification*** lets you delete a notification profile.
  - ***Rename Notification*** lets you rename an existing notification profile.

- **Alerts**

  The *Action* menu features three commands concerning alerts.

  - ***Add New Alert Type...*** lets you create an alert.
  - ***Delete Alert Type*** lets you delete a alert type.
  - ***Rename Alert Type*** lets you rename an existing alert type.

- **User-defined Events**

  The *Action* menu features three commands concerning user-defined events.

  - ***Add New User-defined Event...*** lets you create a new user-defined event.
  - ***Delete User-defined Event*** lets you delete a user-defined event.
  - ***Rename User-defined Event*** lets you rename a user-defined event.

- **Roles**

  The *Action* menu features 4 commands concerning roles in the surveillance system.

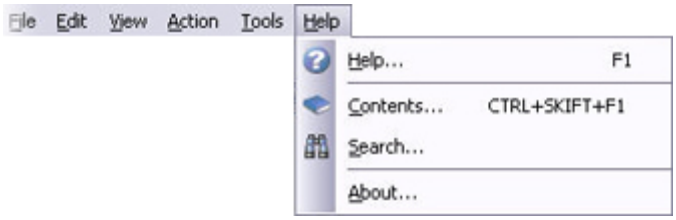
  - ***Add New Role...*** lets you create a new role. Roles define which rights users and groups have on the surveillance system.
  - ***Delete Role*** lets you delete a role.
  - ***Effective Roles...*** lets you view all roles of a selected user or group. This is especially convenient if you have imported groups of users; in fact it is the only way of viewing the roles of individual group members. For more information, see Viewing Effective Roles.
  - ***Rename Role*** lets you rename an existing role.

- ***Registered Services...*** lets you add servers which should be able to communicate with NetEVS even though they are not directly part of the NetEVS surveillance system. See Managing Trusted Servers for more information.

- ***NetDVMS Servers...*** lets you add NetDVMS surveillance system servers specifically, and receive data from them in your NetEVS system. See Integrating NetDVMS Servers for more information.

- ***Effective Roles...*** lets you view all roles of a selected user or group. This is especially convenient if you have imported groups of users; in fact it is the only way of viewing the roles of individual group members. For more information, see Viewing Effective Roles.

- ***Options...*** opens the *Options* dialog, which lets you define and edit several global NetEVS settings. There are settings for logs, user-defined events, and general settings for the preview pane. If you want to use notification profiles, you are also able to define settings for the outgoing SMTP mail server and for AVI generation.



- ***Help...*** lets you access a help topic relevant to your task.
- ***Contents...*** lets you access the help system's table of contents.
- ***Search...*** lets you access the help system's search feature.
- ***About...*** opens a dialog displaying information about the version of the *NetEVS-Manager*. The version information is useful if you need to contact OnSSI Technical Support.

Alerts

Alerts are short messages customized to suit your organization's needs. Examples of alerts: *Panic Button Pressed*, *Fire Exit 23 Open*, *Employee Clocking In*, etc.

Once you have added one or more alerts in the Management Client, you can use rules to trigger the alerts. Example of a rule: When there is motion on *Staff entrance camera*, start recording on that camera, and generate alert *Employee Clocking In*. Alerts triggered this way will be visible in 2 places:

- In the Management Client's alert log.

- In Ocularis Client Lite, where users (rights permitting) will be able to view a list of triggered alerts while browsing recordings. Alerts listed in Ocularis Client Lite are clickable, allowing the users to quickly jump to the time at which an alert was triggered.

All triggered alerts will be visible in Ocularis Client Lite; it is not possible to prevent certain types of alerts from being listed in Ocularis Client Lite.

- **Adding New Alerts**

  1. In the NetEVS Manager's navigation pane, expand *Rules and Alerts*, right-click *Alerts*, and select *Add New Alert Type...*

     Tip: Alternatively, you may simply press CTRL+N on your keyboard.

This will open the *Add New Alert Type* window.

2. In the *Add New Alert Type* window, specify the following:

   - ***Name*:** Type a name for the alert. Use an easily understandable name; when the alert is triggered, the name will appear in the Alert Log as well as in Ocularis Client Lite.

   - ***Description*:** (Optional) Type a description of the alert, for example stating what the alert is meant to be used for. The description will become available when viewing the properties of the alert in the properties pane. It will also become visible if you pause your mouse pointer over the alert when viewing the alerts list in the overview pane.

3. Click *OK*. The new alert will be added to the alerts list in the overview pane:

You are now able to use the alert in rules.

- ## Editing Alerts

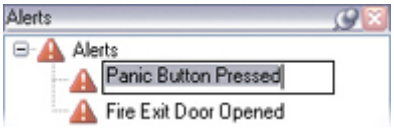
Due to the simple nature of alerts, your editing options are limited to renaming the alert.

1. In the Management Client's navigation pane, expand *Rules and Alerts*, and select *Alerts.* This will show a list of your existing alerts in the overview pane.

2. In the overview pane, right-click the required alert, and select *Rename Alert Type*.

   Tip: Alternatively, you may simply press F2 on your keyboard.

3. You are now able to overwrite the name of the alert:



- ## Deleting Alerts

Note: Remember that deleting an alert will affect any rules in which the alert is used.

Note: When you delete an alert, any log entries about the alert will be kept in the Management Client's Alert Log, but the alert will no longer be visible when browsing recordings in Ocularis Client Lite.

1. In the Management Client's navigation pane, expand *Rules and Alerts*, and select *Alerts.* This will show a list of your existing alerts in the overview pane.

2. In the overview pane, right-click the unwanted alert, and select *Delete Alert Type*.

   Tip: Alternatively, you may simply press DELETE on your keyboard.

3. You will be asked to confirm that you want to delete the selected alert. If you are sure, click the *Yes* button.

Archiving

Archiving is the automatic transfer of recordings from a camera's default database to another location. The amount of recordings you are able to store is not be limited by the size of the camera's default database. Archiving also makes it possible to back up your recordings on backup media of your choice.

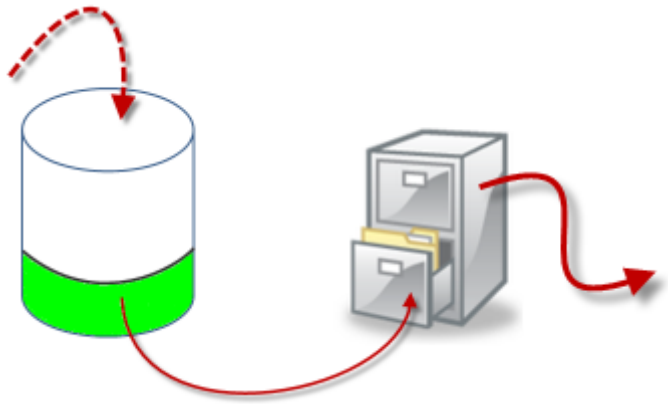
Archiving is configured on a per-recording server basis. Once you have configured the archiving settings for a recording server (where to store archives, how often to transfer recordings to the archives, etc.), you can enable archiving for individual cameras. When archiving is enabled for a camera, the contents of the camera's database will automatically be moved to an archive at regular intervals.

Depending on your requirements, you are able to configure one or more archives for each of your recording servers. Archives can be located either on the recording server computer itself, or at another location which can be reached by NetEVS, for example on a network drive.

Effective archiving is set up adjusting six interdependent settings:

- *Save recorded data in the specified time period*, which is located in the *Maximum storage limits* group on the individual device's *Record* tab.
- *Save recorded data until the specified size is reached*, which is located in the *Maximum storage limits* group on the individual device's *Record* tab.
- *Database Retention (hours)*, which is located on the fourth page of the archive wizard, when the archive wizard is opened from the recording server's *Archiving* tab.
- *Archive Retention (days)*, which is located on the fourth page of the archive wizard, when the archive wizard is opened from the recording server's *Archiving* tab.
- *Archive Retention (GB)*, which is located on the fourth page of the archive wizard, when the archive wizard is opened from the recording server's *Archiving* tab.
- The archiving schedule itself, which is located on the fifth page of the archive wizard, when the archive wizard is opened from the recording server's *Archiving* tab.

The *Maximum storage limits* define the size of the camera's database, exemplified by the cylinder in the following:



Recordings' way from database to archive to deletion

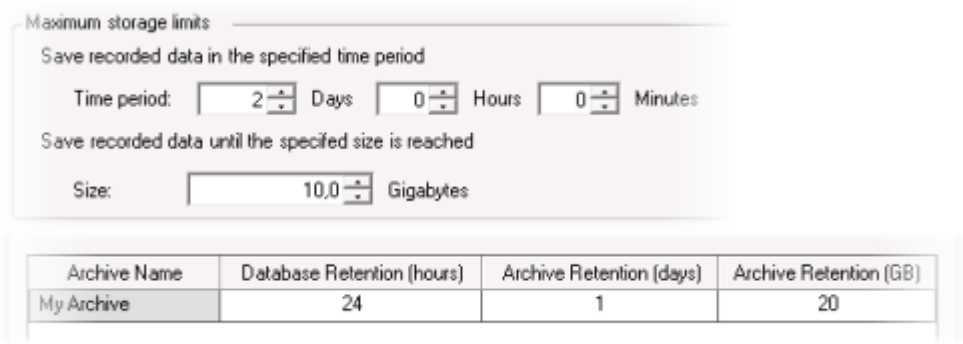
By means of the *Database Retention (hours)* setting, illustrated by the white area in the cylinder, you define how old recordings must be before they are archived. In our illustrated example, recordings are archived

when they have "sifted" down into the green area of the database cylinder, or in other words: when they are old enough to be archived.

The settings *Archive Retention (days) and Archive Retention (GB)* define how long the recordings remain in the archive; recordings remain in the archive for the time specified, or until the archive has reached the specified size limit. When these settings are met, NetEVS begins to overwrite the old recordings in the archive.

The archiving schedule—which is set up in the archive wizard—defines how often and at what times archiving takes place.

These six parameters must be set up in accordance with each other to have recordings archived. The time period specified in *Save recorded data in the specified time period* must be larger than the time period stated in *Database Retention (hours)* **plus** the time interval stated in the archiving schedule.



The time periods stated in *Save recorded data in the specified time period* must be larger than the time period stated in *Database Retention (hours)* **plus** the time interval stated in the archiving schedule.

- ### Configuring and Managing Archiving for a Recording Server

  You configure and manage a recording server's archiving settings through the Archive Wizard, available from the recording server's Archiving Tab. The wizard takes you through the steps required in order to:

  - Create new archives for the recording server
  - Change existing archives
  - Remove archives

- ### Default Archive

  For each recording server, you are able to create one or more archives.

  For recording servers with more than one archive, the default archive is the archive directory to which archiving will take place if use of another of the recording server's archive directories has not deliberately been specified for certain cameras. Only one archive directory can be the recording server's default archive.

  - If you create more than one archive for a recording server, you must thus select which of the archives should be the recording server's default archive. You do this through the Archive Wizard.
  - If you only create one archive for a recording server, the archive will automatically be the recording server's default archive.

- ### Enabling and Configuring Archiving for Individual Devices

  Once archiving has been configured for a recording server, you can enable archiving for individual cameras, microphones or speakers. You are also able to select which of a recording server's archives should be used for the individual device. Note that archiving is set up by adjusting six interdependent settings as described previously.

  1. In the navigation pane, expand *Devices*, and select either *Cameras*, *Microphones* or *Speakers* as required.
  2. In the overview pane, select the required device.
  3. In the properties pane, select the *Archiving* tab.

- ### Viewing Archived Recordings

  You can view archived recordings in the Ocularis Client or Ocularis Client Lite. As long as the archived recordings are stored locally or on accessible network drives, you can use the Ocularis Client/Ocularis Client Lite's many features (timeline browser, search, evidence export, etc.) when browsing archived recordings; just like you would with recordings stored in a cameras' regular databases. The fact that you are viewing archived recordings will be completely transparent.

  Note: Remember that individual user rights may prevent particular users from viewing recordings from particular cameras—just as is the case when browsing recordings from cameras' regular databases.

- ### Backing Up Archived Recordings

  Many organizations want to back up their recordings, using tape drives or similar. Exactly how you do this is highly individual, depending on the backup media used in your organization. However, the following is worth keeping in mind:

  ## Back Up Archives Rather than Camera Databases

  Always create backups based on the content of archives, not based on individual camera databases. Creating backups based on the content of individual camera databases may cause sharing violations or other malfunctions.

  When scheduling a backup, make sure the backup job does not overlap with your specified archiving times.

  Tip: You are able to view each recording server's archiving schedule, as well as the time of the next scheduled archiving in each of a recording server's archives, on the Archiving Tab.

  ## Knowing Archive Structure Lets You Target Backups

  When recordings are archived, they are stored in a certain sub-directory structure within the archive.

  During regular use of your NetEVS system, the sub-directory structure will be completely transparent to the system's users, as they browse all recordings with the Ocularis Client or Ocularis Client Lite regardless of whether the recordings are archived or not. Knowing the sub-directory structure is thus primarily interesting if you want to back up your archived recordings. See *Archive Structure* below for more information.

Viewing Backed-Up Archives

If you need to view your backed-up recordings, you cannot view them directly from the backup media.

Instead, copy the backed-up archiving directories into their original place in your NetEVS system's archiving directory structure. You will able to use all of the Ocularis Client/Ocularis Client Lite's features (timeline browser, search, evidence export, etc.) when browsing the recordings.

- ## Archive Structure

When recordings are archived, they are stored in a specific sub-directory structure within the archive.

Note: During regular use of your NetEVS system, the sub-directory structure will be completely transparent to the system's users, as they browse all recordings with the Ocularis Client/Ocularis Client Lite regardless of whether the recordings are archived or not. Knowing the sub-directory structure is thus primarily interesting if you want to back up your archived recordings.

In each of the recording server's archive directories, separate sub-directories are automatically created. These sub-directories are named after the GUID of the recording server.

What is a GUID? A GUID is a Globally Unique IDentifier; a unique 128-bit number used to identify components on a Windows system. Example of a GUID: 469c37e4-28ad-487b-bcb7-e5fd7e5a609a.

Since you are able to able to store recordings from different cameras in the same archive, and since archiving for each camera is likely to be performed at regular intervals, further sub-directories are also automatically added.

These sub-directories each represent approximately an hour's worth of recordings. The one-hour split makes it possible to remove only relatively small parts of an archive's data if the maximum allowed size of the archive is reached.

The sub-directories are named after the GUID of each camera *plus* the date and time of the most recent database record contained in the sub-directory.

Naming structure:

```
...[Archive Name]\[Recording Server GUID]\[Camera GUID plus date and
time of most recent recording]\
```

Real life example:

```
...OurArchive\b82e691f-67cf-4177-a0b9-e69077d4d75a\469c37e4-28ad-
487b-bcb7-e5fd7e5a609a_2007-04-30_14-30-20\
```

In the example, the latest recording contained in the sub-directory is from 20 seconds past half past 2 in the afternoon on April 30th 2007.

Even further sub-directories are automatically added. The amount and nature of these sub-directories depend on the nature of the actual recordings. For example, several different such sub-directories will be added if the recordings are technically divided into sequences; something which is often the case if motion detection has been used to trigger recordings.

If you want to back up your archives, knowing the basics of the sub-directory structure enables you to target your backups. Examples:

- If wishing to back up the content of an entire archive, back up the required archive directory and all of its content; for example everything under:

  ```
  ...OurArchive\
  ```

- If wishing to only back up the recordings from a particular camera from a particular period of time, back up the contents of the relevant sub-directories only; for example everything under:

  ```
  ...OurArchive\b82e691f-67cf-4177-a0b9-e69077d4d75a\469c37e4-
  28ad-487b-bcb7-e5fd7e5a609a_2007-04-30_14-30-20\
  ```

- ### Archiving and Virus Scanning

  If you are using virus scanning software on the computer on which the camera databases you want to archive are located, or on a computer to which data is archived, it is likely that the virus scanning will use a considerable amount of system resources on scanning all the data which is being archived.

  This may affect system performance negatively. Also, virus scanning software may temporarily lock each file it scans, which may further impact system performance negatively.

  If possible, you should therefore disable any virus scanning of camera databases and archiving locations.

- ### Frequently Asked Questions about Archiving

  How do I Ensure that Archiving is Set up Correctly?
  Archives are set up by adjusting the six interdependent parameters correctly as described previously.

  Can I Create an Archive on a Network Drive?
  Archives can be located either on the recording server computer itself, or at another location which can be reached by NetEVS, for example on a network drive.

  What Happens when the Maximum Size of an Archive is Reached?
  When you create archives through the *Archive Wizard*, you specify a maximum size limit for the archive, in days and gigabytes. When either of the two maximum limits is reached, recordings in excess of the specified number of days/gigabytes will be removed. However, in order not to remove more recordings than necessary, excess recordings will be removed in chunks of approximately one hour's worth of recordings.

  What Happens if a Scheduled Archiving Fails?
  If a scheduled archiving fails, for example because the archive is located on a network drive which is temporarily unavailable, NetEVS will retry archiving after an hour. If that fails, another retry will take place after yet another hour, and so forth.

  If the time of the next scheduled archiving is reached between 2 retries, an archiving attempt will be made at the scheduled time; if that attempt fails, NetEVS will retry archiving after an hour, and so forth.

  How Long Does it Take to Complete a Scheduled Archiving?
  Archiving of data will never take longer than twice the amount of time it took to record the data, and never longer than 120 minutes.

  The time it takes for NetEVS to complete an archiving job is determined by several factors. The amount of data to be archived is obviously an important factor. However, like all other system processes, archiving also ties up system resources. If NetEVS were to archive everything as

quickly as possible, a disproportional amount of system resources might be tied up by the archiving.

Therefore, NetEVS uses a number of parameters to determine the ideal amount of resources to spend on each archiving job, and thus the amount of time it will take to complete each scheduled archiving. These parameters include, but are not limited to:

- When the next archiving is scheduled for
- A minimum number of kilobytes to archive per second
- A compulsory period of archiving-free time inserted after each finished archiving job to ensure that archiving jobs do not overlap in time
- Whether the maximum size limit of the archive is about to be reached, and consequently if any existing data needs to be removed before the new data can be archived

What Happens if Archiving Is Not Finished before the Next Scheduled Archiving?
NetEVS system inserts a compulsory period of archiving-free time after each finished archiving job. This ensures that archiving jobs do not overlap in time. See also the answer to the previous question *How long does it take to complete a scheduled archiving?*

Audio

NetEVS supports two-way audio.

Ocularis Client and Ocularis Client Lite users can (user rights permitting) listen to live and recorded audio from microphones attached to devices, and talk live to audiences through loudspeakers connected to devices. If required, users can listen and talk live simultaneously. This way they can interact directly with their audiences.

Such two-way interaction requires that the involved devices have microphones *and* speakers attached. Users can of course also use one-way audio in cases where only microphones *or* speakers are attached to devices.

In the Management Client, you configure microphones, speakers, and users' rights to use them separately. See About Microphones and About Speakers for more information.

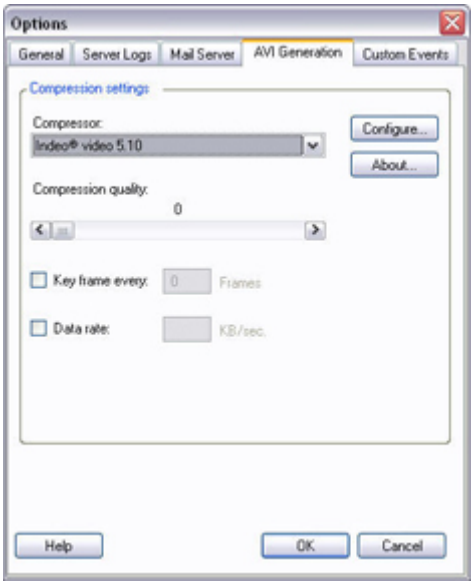
You cannot listen to microphones or talk through speakers from the Management Client; you must use Ocularis Client or Ocularis Client Lite.

AVI Compression

You are able to specify compression settings for the generation of AVI video clip files. Specifying these settings is a prerequisite if you want to include AVI files in e-mail notifications sent out by rule-triggered notification profiles.

To specify compression settings for AVI file generation, do the following:

1. Go to Management Client's menu bar, and select *Tools* > *Options...*
2. In the *Options* window, select the *AVI Generation* tab:



3. Specify the following:

    - ***Compressor*:** Select the required codec (compression/decompression technology).

      Tip: If in doubt about which codec to select, try using Indeo® 5.10 (if available). This codec generally provides a good compromise between quality and file size.

      Tip: For some—but not all—codecs you are able to configure the codec by clicking the *Configure...* button. Configuration options are entirely codec-specific.

      Tip: For some—but not all—codecs you are able to view detailed information about version number etc. by clicking the *About...* button.

    - ***Compression quality*:** (Not available for all codecs). Use the slider to select the required degree of compression (*0-100*) to be performed by the codec.

      0 means no compression, generally resulting in high image quality and large file size. *100* means maximum compression, generally resulting in low image quality and small file size.

      If the slider is not available, compression quality will be determined entirely by the selected codec.

    - ***Key frame every*:** (Not available for all codecs). If you want to use key frames, select the check box and specify the required number of seconds between keyframes in the neighboring field.

      A keyframe is a single frame stored at specified intervals. The keyframe contains the entire view of the camera, whereas the following frames contain only the pixels that change. This helps greatly reduce the size of files.

      If the check box is not available, or not selected, every frame will contain the entire view of the camera.

    - ***Data rate*:** (Not available for all codecs). If you want to use a particular data rate, select the check box and specify the required number of kilobytes per second in the neighboring field.

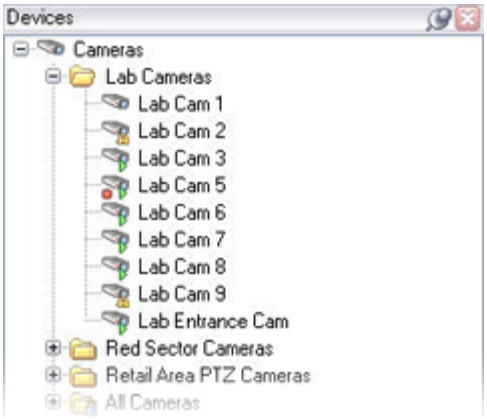
      If the check box is not available, or not selected, date rate will be determined entirely by the selected codec.

4. Click *OK*.

Cameras

You add cameras through the Management Client's Hardware Detection Wizard.
Enabling, disabling and renaming individual cameras takes place on the recording server hardware management level; see Managing Hardware.

For all other configuration and management of cameras, expand *Devices* in the Management Client's navigation pane, then select *Cameras*. In the overview pane, group your cameras for an easy overview of your cameras. Grouping also lets you specify common properties for all cameras within a group in one step. See Using Device Groups for information about creating groups as well as adding cameras to your groups.



Device groups are used for grouping cameras

Once you have placed your cameras in groups, configuration can begin:

- **Configuring Individual Cameras**

  Configure individual cameras by selecting the required camera in the list, then specifying the camera's required settings on the tabs in the *Properties* pane:

  - The *Info* tab for managing the selected camera's name, etc.
  - The *Settings* tab for managing the selected camera's general settings.
  - The *Streams tab* for managing the selected camera's video streams.
  - The *Record* tab for managing the selected camera's recording and database storage settings.
  - The *Archiving* tab for managing the selected camera's archiving settings. Archiving is the automatic transfer of recordings from the camera's default database to another location. This way, the amount of recordings you are able to store will not be limited by the size of the camera's default database. Archiving also makes it possible to back up your recordings on backup media of your choice.
  - The *Presets* tab for managing the selected camera's preset positions (tab is only available if the selected camera is a PTZ camera; PTZ is short for Pan/Tilt/Zoom).
  - The *Patrolling* tab for managing the selected camera's patrolling profiles (tab is only available if the selected camera is a PTZ camera).

- The *Events* tab for managing hardware configurable events.
- The *Client* tab lets you specify information which will affect access client's use of the selected camera.
- The *Motion* tab for managing the selected camera's motion detection settings.

- **Camera List's Status Icons**

The following icons are used to indicate the status of each camera in the camera list:

Camera is enabled

Camera is recording

***Camera is stopped*:** A stopped camera can be started automatically through a rule. When a camera is stopped, no information is transferred from the camera to NetEVS, in which case neither live viewing nor recording will be possible. However, a stopped device will still be able to communicate with the recording server, as opposed to when the device is disabled.

***Camera is disabled*:** A disabled camera cannot be started automatically through a rule; it must be enabled manually in the Management Client. When a camera is disabled, neither live viewing nor recording will be possible. A disabled device will not be able to communicate with the recording server, as opposed to when the device is merely stopped.

Camera requires attention

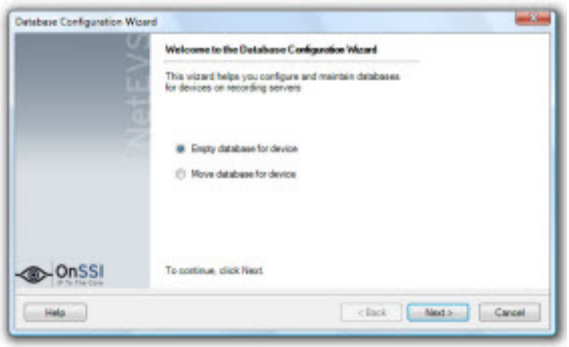
Note that some icons may be combined, as in this example where *Camera is enabled* is combined with *Camera is recording* (since a recording camera is also an enabled camera)

Database Management

Manage the databases of individual cameras, microphones and speakers through the *Database Configuration Wizard*. The wizard conveniently guides you through the processes of emptying or moving databases.

Note: Recordings will only be saved in the databases when recording is enabled and recording-related rule criteria are met.

To manage a database, select the required camera, microphone or speaker in the Management Client's overview pane, then select the *Record* tab in the properties pane. On the *Record* tab, click the *Database Wizard...* button to open the *Database Configuration Wizard*. When you open the *Database Configuration Wizard* this way, it lets you select between two options: empty or move the database.


Database Configuration Wizard
Welcome to the Database Configuration Wizard
This wizard helps you configure and maintain databases for devices on recording servers
Empty database for device
Move database for device
To continue, click Next
OnSSI
Help
< Back
Next >
Cancel

Database Configuration Wizard, displaying database management options

Tip: The *Database Configuration Wizard* lets you select different options if opened while working with a recording server; see *Recording Server Database Management*.

- ### Empty Database for Device

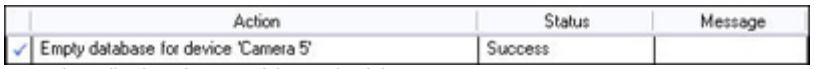
  To empty the database of the selected camera, microphone or speaker, do the following in the *Database Configuration Wizard*:

  1. On the wizard's first step, select *Empty databases for device*, and click *Next*.
  2. On the second step of the wizard, select the check boxes next to the databases you want to empty:

     Then click *Next*.
  3. In order to prevent accidental data deletion, you will be asked to confirm that you want to permanently delete all media data for the device in question.

     If you are sure, click *Yes*.
  4. The database will be emptied. A bar displays how the emptying job progresses:

When the emptying job is complete, you will be informed whether the job was successful or whether it failed. If the job failed, you will be able view a status message indicating what caused the failure.



Example: Indication of successful emptying job

Example: Indication of failed emptying job, with link to status message

5. Click Finish.

- ## Move Database for Device

If several storage areas exist on the recording server on which the selected camera, microphone or speaker belongs, you are able to move the database to another storage area. Moving the database will not affect its content, and you will be still able to record during the move.

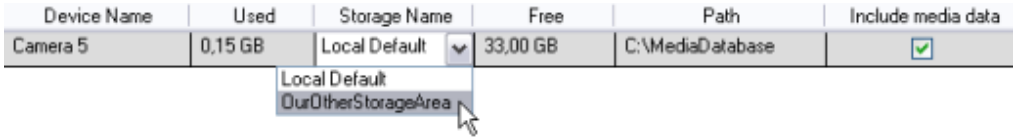
IMPORTANT: Before moving a database, make sure sufficient free space is available at the new storage area. This is especially important if moving a large database, since the moving process may take time, and the database may become even larger if the database must store new recordings during that time. As a rule of thumb, sufficient free space means *at least* the size of the database (allowing for the fact that it may grow) plus 500 MB. If sufficient free space is not available at the new storage drive, you risk data being deleted. The wizard described in the following helps you determine database and storage area sizes.

Tip: A recording server's storage areas can be managed through the *Database Configuration Wizard* when the wizard is opened while working with a recording server; see Recording Server Database Management.

To move the database of the selected camera, microphone or speaker, do the following in the *Database Configuration Wizard*:

1. On the wizard's first step, select *Move database for device*, and click *Next*.

2. On the second step of the wizard, select the required storage area:



Selecting required storage area; note that the *Include media data* box is selected by default

Make absolutely sure that the new storage area has enough free space to accommodate the database: Compare the *Used* column (which displays the current size of the database) with the *Free* column (which displays the current amount of free space in the destination storage area). See also the IMPORTANT note in the previous.

Then, make sure the required database is selected in the *Include media data* column (if check box is not selected, only the database structure, not its content, will be moved), and click *Next*.

3. The database will be moved. A bar displays how the beginning of the moving job progresses:

You will be informed whether the job has begun successfully or whether it has failed. If the job failed, you will be able to view a status message indicating what caused the failure.

	Action	Status	Message
✓	Move database for device 'Camera 5'	Success	

Example: Indication of successful beginning of a moving job

	Action	Status	Message
⚠	Move database for device 'Camera 5'	Fail	Messages...

Example: Indication of failed moving job, with link to status message

Note that the status *Success* only indicates that the moving job has begun successfully, not that the job is complete. Moving of large databases may take considerable time.

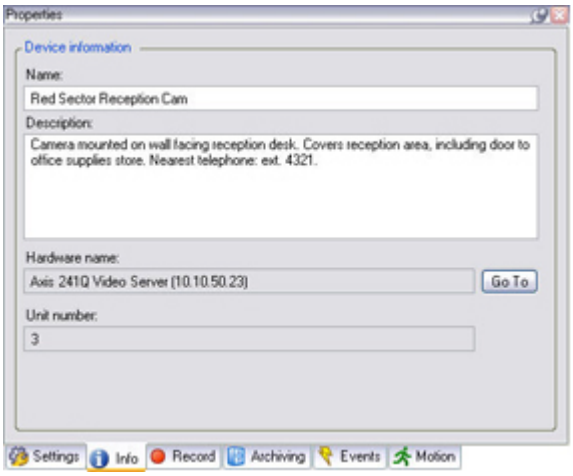
Tip: You can follow the further progress of the moving job by looking at the *Database Configuration* information on the Record tab for the device in question.

4. Click *Finish*.

Tip: Protect your databases! Databases may become corrupted if the recording server is shut down abruptly, for example due to a power failure or similar. See Protecting Databases from Corruption for useful information about how to avoid corrupt databases.

Info

The *Info* tab lets you view and edit basic information about a camera.



- **Info Tab's Fields**
  The *Info* tab contains the following fields:

  - ***Name*:** Name of the camera. The name will be used whenever the camera is listed in NetEVS and access clients. A name is not compulsory, but highly recommended. The name does not have to be unique.

    To change the name, overwrite the existing name and click the *Save* button in the Management Client's toolbar.

Tip: If you change the name, it will be updated throughout NetEVS. This means that if the name is used in, for example, a rule, the name will automatically change in the rule as well.

- ***Description*:** Description of the camera. A description is not compulsory. The description will appear in a number of listings within NetEVS. For example, the description will appear when pausing the mouse pointer over the camera's name in the overview pane:

To specify a description, type the description and click the *Save* button in the Management Client's toolbar.

- ***Hardware name*:** Name of the hardware with which the camera is connected. The field is non-editable. However, the hardware name can be changed by clicking the *Go To* button next to the field. Clicking the *Go To* button will take you to the hardware information, where the name is editable.

- ***Unit number*:** Non-editable field, displaying the unit on which the camera is attached on the hardware.

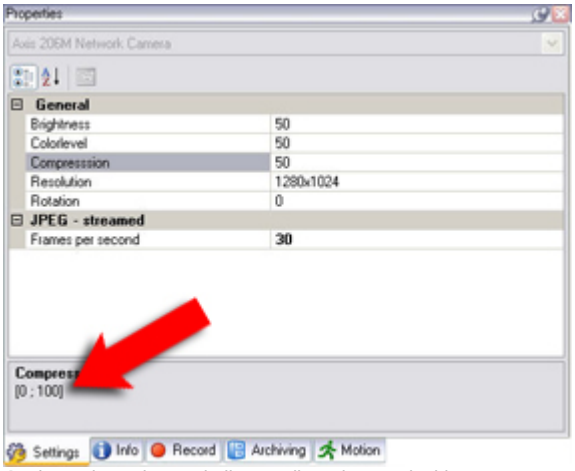
  For single-device hardware, the unit number will typically be *1*. For multi-device hardware, such as video servers with several channels, the unit number will typically indicate the channel on which the camera is attached, e.g. *3*.

Settings

The *Settings* tab lets you verify or edit key settings, such as default frame rate, resolution, compression, on-screen date/time/text display, etc., for a selected camera, or for all cameras within a selected device group. However, if you select a device group with 400 or more cameras, the *Settings* tab will not be available for editing because changing settings for so many devices in one step takes too long time.

Note: The content of the *Settings* tab is determined entirely by the drivers for the cameras in question, and is therefore likely to vary depending on the types of cameras selected.

The content of the *Settings* tab is displayed in a table, in which the first column lists the available settings, and the second column lists the value of each setting. You are typically able to change values; when you have changed a setting to a non-default value, the value will appear in **bold**. When a value must be within a certain range, for example between 0 and 100, the allowed range will be displayed in the information box below the settings table:



Settings tab. Red arrow indicates allowed range; in this example the value used to specify compression must be a number between 0 and 100. Content of *Settings* tab varies depending on selected cameras.

Tip: Some cameras may support more than one type of stream, for example MPEG4 and MJPEG. In that case, you can use multi-streaming to establish two independent streams from the camera to the recording server—a stream for live viewing and another stream for playback purposes, with different resolution, encoding, and frame rate.

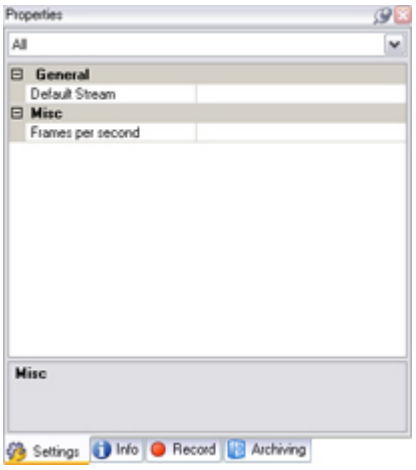
Tip: If you change a camera's settings, you can quickly verify the effect of your change if you have the preview window enabled. To enable the preview pane, select *View > Preview Window* in the Management Client's menu bar. Note, however, that you cannot use the preview pane to judge the effect of frame rate changes, as a special frame rate for the preview pane's thumbnail images is used (defined in the *Options* dialog).

- ### Specifying Common Settings for All Cameras in a Device Group

  If using device groups, you are able to quickly specify common settings for all cameras within a given device group:

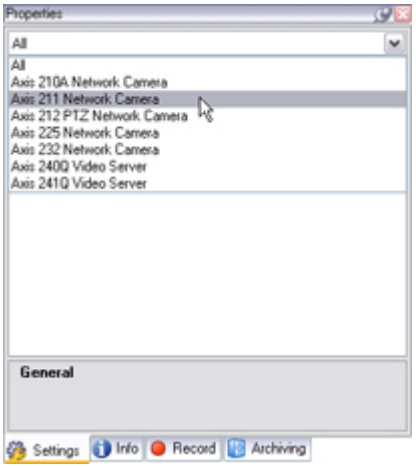
  1. In the camera list in the Management Client's overview pane, right-click the designated device group. On the *Settings* tab, all settings *which are common to all of the device group's cameras* will be listed. Note that you are unable to view and/or edit the contents of the *Settings* tab if the device group contains more than 400 cameras because changing settings for so many devices in one step takes too long time.

Depending on the amount and type of cameras in the device group, the list may only contain a few settings:

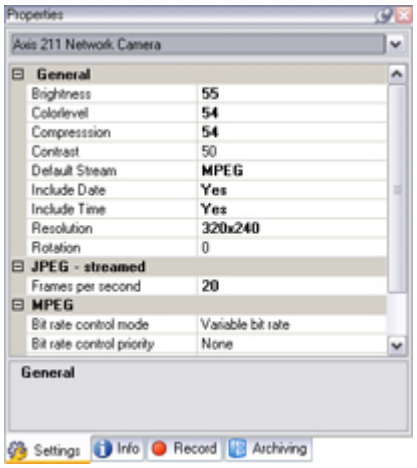


You are now able to verify or change the common settings.

2. You are able to specify settings for the device group's individual camera types as well. From the menu above the settings list, select the required type of camera:



You are now able to verify or change the settings of the selected type of camera:



3. If you have made changes to the settings, save your changes by clicking the *Save* button in the Management Client's toolbar:

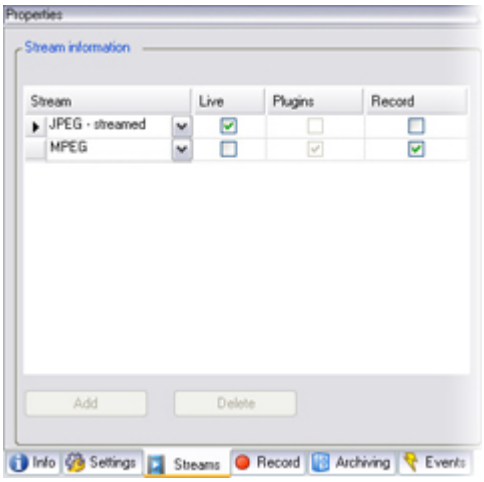
Streams

Some cameras support multi-streaming, with which you can establish two independent streams to the recording server—a stream for live viewing and another stream for playback purposes, with different resolution, encoding, and frame rate.

Note: Only some cameras support multi-streaming. Even when cameras support multi-streaming, individual multi-streaming capabilities may vary considerably between different cameras. Refer to the documentation for your cameras for exact details. To see if a camera offers different types of streams, you can also view the *Settings* tab.

Manage multi-streaming on the *Streams* tab. The tab is only available when the selected camera or device group supports multi-streaming. However, if you select a device group with 400 or more cameras, the *Streams* tab will not be available for viewing and editing because changing settings for so many devices in one step takes too long.

To access the *Streams* tab, expand *Devices* in the Management Client's navigation pane, expand the relevant camera folder in the overview pane, select the required camera and then select the *Streams* tab in the properties pane.



The tab will by default list a single stream—the selected camera's default stream, used for live video as well as for video which is being recorded for playback purposes.

- ### How to Add a Second Stream

  1. On the *Streams* tab, click the *Add* button. This will add a second stream to the list (you cannot have more than 2 streams).

  2. In the *Stream* column, select the required type of stream.

  3. If you want to use the stream for live video, select the check box in the *Live* column. Leave the check box cleared if you only want to use the stream for video which will be recorded.

     You can use the same stream for both live and recorded video if required. You cannot use 2 different streams for the same purpose, for example for live video.

  4. If you want to use the stream for recorded video, select the check box in the *Record* column. Leave the check box cleared if you only want to use the stream for live video.

     Note how the selection in the *Plug-ins* column always follows the stream you have selected for recorded video. This is because the integrated plug-in which NetEVS uses for motion detection is always applied on the video stream which will be recorded.

  5. Click the *Save* button in the Management Client's toolbar:

- ### How to Edit Existing Streams

  1. On the *Streams* tab, select the stream you want to edit.

  2. Make the required changes.

  3. Click the *Save* button in the Management Client's toolbar.

- ### How to Remove a Previously Added Stream

  1. On the *Streams* tab, select the unwanted stream.

2. Click the *Delete* button.

3. Click the *Save* button in the Management Client's toolbar.

Recording

The *Record* tab lets you specify recording and storage settings for the selected camera.

What does recording mean? In IP video surveillance systems, the term *recording* means *saving video from a camera in the camera's database on the surveillance system*. In many IP video surveillance systems, all of the video received from cameras is not necessarily saved. Instead, saving of video in a camera's database, i.e. recording, is started only when there is a reason to do so: For example when motion is detected, when an event occurs, or when a specific period of time begins. Recording is then stopped after a specified amount of time, when motion is no longer detected, when an event occurs, when a time period ends, or similar. The term *recording* originates from the analog video era, when video was taped only when the record button was pressed.

Note: Recordings from a camera will only be saved in the camera's database when recording is enabled and recording-related rule criteria are met.

Record tab

- ### Enabling and Disabling Recording

  Recording is enabled by default.

  To enable/disable recording for the selected camera, select/clear the *Record* tab's *Enable recording* check box.

  Note: Recording must be enabled for the camera before you are able to record (i.e. save) video from the camera. A rule specifying that a camera should record under particular circumstances will not work if recording is disabled for the camera in question.

- ### Recording Settings

  The *Record* tab's *Recording settings* specify the required recording frame rate for the camera as well as any prebuffering settings:

  - #### Recording Frame Rate

    Note: Specifying recording frame rate is only possible for MJPEG, a video codec (technology for compressing and decompressing data) with which each frame is separately compressed into a JPEG image.

    Select or type the required recording frame rate (in FPS, Frames Per Second) in the *Recording frame rate* box.

    Clicking the *Recording frame rate* box' up/down arrows will increase/reduce the value in increments of 1 FPS.

    Tip: If you click inside the *Recording frame rate* box, 2 decimals will be added to the value. By selecting the number before or after the separator, you are able to increase/reduce the numbers in increments of 1 unit. This way you are able to specify a very specific recording frame rate average over time, for example of 20.15 FPS:

    Specifying a specific recording frame rate

  - #### Prebuffering

    Prebuffering is essentially the ability to save video in the camera's database before the initial boundaries of a recording.

    Use of prebuffering can be highly advantageous: It allows you to save video from *before* the events or times used to start recordings. If, for example, you have created a rule specifying that recording should start when a door is opened, being able to see what happened immediately prior to the door being opened may also be important.

How Does Prebuffering Work?

Prebuffering is possible since NetEVS continuously receives streams of video from connected cameras (unless the transfer of video from cameras has in some way been disabled). Storing video from before the initial boundaries of a recording is therefore not a problem: video passes through NetEVS anyway.

When prebuffering is enabled for a camera, NetEVS continuously records video from the camera's stream and provisionally stores it in the database for a specified number of seconds before automatically deleting it—unless the provisionally stored video turns out to be required for a recording, in which case it is automatically added to the recording.

The following example illustrates how prebuffered video is added to a recording:

This is the stream received by NetEVS:

These are the initial boundaries of a recording, as defined, for example, by start and stop events:

However, a rule specifies that recording should start 5 seconds prior to the start event, so 5 seconds of prebuffered video is added:

This is what is actually recorded:

Enabling and Disabling Prebuffering

Prebuffering is by default enabled; with a prebuffer size of 3 seconds. To enable/disable prebuffering, select/clear the *Enable prebuffering* check box. When enabling, remember to specify a prebuffer size.

Specifying Prebuffer Size

Select or type the required prebuffer size (in seconds) in the *Prebuffer size* box. Clicking the *Prebuffer size* box' up/down arrows will increase/reduce the value in increments of 1 second.

The number of seconds you specify in the *Prebuffer size* box must be sufficiently large to accommodate your requirements. Example: If, like in the following rule example, you plan to be able to save video from 5 seconds prior to detected motion, the prebuffer size must be at least 5 seconds.

Using Prebuffering in Rules

The use of prebuffering enables you to create rules specifying that recording should begin prior to the event or time triggering the rule.

Example: Your ability to use the below rule—specifying that recording should start on a camera 5 seconds before motion is detected on the camera—depends on prebuffering being enabled for the camera in question.

Perform an action on Motion Started
from Red Sector Entrance Cam
start recording 5 seconds before on the device on which event occurred

Detail from a rule relying on prebuffering

- **Maximum Storage Limits**

  The *Record* tab's *Maximum storage limits* specify how long recordings are kept in the database for. Note that adjusting the *Maximum storage limits* has an impact on any archiving you may have set up. See About Archiving for more information.

  Tip: With archiving, you are able to store recordings beyond the maximum limits of the camera's database.

  For the camera's database, you are able to specify a maximum time limit (e.g. 1 day) as well as a maximum database size limit (e.g. 2 gigabytes). Whichever of the 2 limits is reached first will apply.

- ### Specifying a Maximum Storage Time Limit

  To specify a maximum time limit, select or type the required values in the *Time period* boxes (*Days*, *Hours* and *Minutes*).

  Clicking the *Time period* boxes' up/down arrows will increase/reduce the value in increments of 1 day/hour/minute respectively.

- ### Specifying a Maximum Storage Size Limit

  By default, the maximum size of a camera's database is 5 GB. To specify a different maximum database size limit, select or type the required value (in gigabytes) in the *Size* box.

  Tip: The value in the *Size* box is shown with 2 decimals. By selecting the number before or after the separator, you are able to increase/reduce the numbers in increments of 1 unit. This way you are able to specify a very specific maximum database size, for example of 4.13 gigabytes.

IMPORTANT: In order to prevent operating system failures due to insufficient disk space, the oldest records in the database will automatically be deleted for all cameras, microphones and speakers recording on the disk in question when less than 500 MB of space is left on the disk containing the database, regardless of any time or size limits specified for the databases. This will help ensure that at least 500 MB of disk space will be available for operating system use, and by using archiving you are able to store recordings beyond the maximum limits of the databases.

- ## Database Configuration

  The *Record* tab's *Database configuration* section displays information about the database used for the camera:

  - ### Database Configuration Section's Fields

    The *Database Configuration* section contains the following fields:

    - ***Database Name*:** Non-editable field, displaying the name of the database used for the camera.
    - ***Database Path*:** Non-editable field, displaying the path to the database used for the camera.
    - ***Used Space*:** Non-editable field, displaying the current size of the database for the camera.

  - ### Database Wizard

    The *Database Configuration* section features a *Database Wizard...* button.

    Clicking the *Database Wizard...* button will start the *Database Configuration Wizard*, with which you are able to quickly and conveniently empty or move the database for the camera.

Archiving

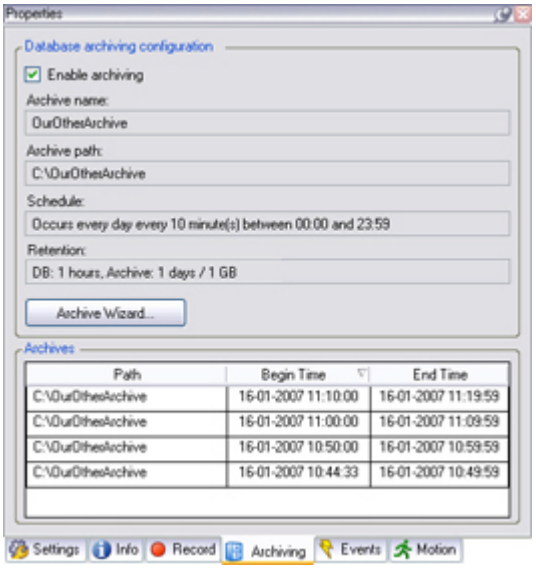
You are able to view and manage the archiving settings of a selected camera on the *Archiving* tab.

Note: Being able to manage a camera's archiving settings requires that one or more archives have been defined on the recording server to which the camera belongs. See About Archiving for more information.

Note: Another tab called *Archiving* will be displayed if you view the properties of a recording server; this is where you create and manage the recording server's archives. For more information, see *Archiving* tab (Recording Server Properties).

What is archiving? Archiving is the automatic transfer of recordings from a camera's default database to another location. This way, the amount of recordings you are able to store will not be limited by the size of the camera's default database. Archiving also makes it possible to back up your recordings on backup media of your choice. See About Archiving for more information.

To access the *Archiving* tab, select the required camera in the overview pane, then select the *Archiving* tab in the properties pane.



- ### Database Archiving Configuration Information

  The *Database archiving information* section in the upper part of the tab contains the following:

  - ***Enable archiving*:** Only available if one or more archives have been created on the recording server. Selecting box lets you enable archiving for the camera in question. If you do not use the *Archive Wizard* to specify otherwise, archiving of recordings from the camera will take place in the recording server's default archive.

  - ***Archive name*:** Name of the archive selected for the recording server.

  - ***Archive path*:** Path to the archive directory.

  - ***Schedule*:** Archiving schedule (i.e. how often archiving should take place). Scheduling is defined for each of a recording server's archives, and thus depends on the selected archive.

- ***Retention*:** Retention time for database (in hours) and archive (in days and GB), as specified when defining archives through the Archive Wizard.

Using Archive Wizard to Select Archive for Camera

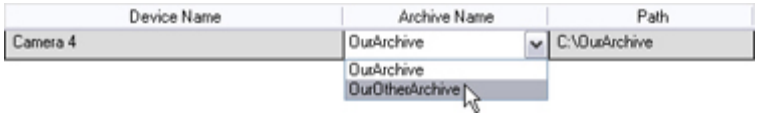
When archiving is enabled for a camera, the camera's recordings will by default be archived in the default archive of the recording server to which the camera belongs.

If more than one archive has been created on the recording server, you can use the *Archive Wizard* to archiving location for the camera:

1. Click the *Archiving* tab's *Archive Wizard...* button to open the *Database Archiving Configuration Wizard*—normally just referred to as the *Archive Wizard*.

2. When dealing with a camera, the wizard only offers one option: *Select archive for device*. Click *Next* to continue.

3. In the *Archive Name* column, select the required archive:



You cannot select more than one archive for a camera. If you later want to use another archive for the camera, you can run the wizard again.

Click *Next*.

4. The camera's archiving settings will be changed to reflect your selection. A progress bar will indicate how the change progresses.

When ready, the wizard will display a confirmation. If the selected archive could not be used, the wizard will display a link to detailed information about what caused the problem.

5. Click *Finish*.

List of Performed Archivings for Camera

Each time archiving is performed for a camera—according to the scheduling defined for the selected archive—the archived recordings are stored in separate subdirectories under the selected archive location.

Technically, each performed archiving is thus stored individually, although this fact will be completely transparent when viewing the archived recordings with the Ocularis Client/Ocularis Client Lite.

The fact that archived recordings are stored individually means that you are able to view a list of each performed archiving, with exact timestamps information about the recordings included in each performed archiving:

- ***Path*:** Path to the archive directory.

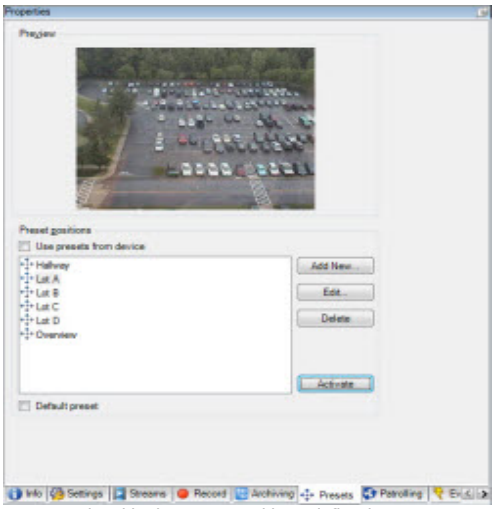
- ***Begin time*:** Date and time of the oldest recording included in the performed archiving.

- ***End time*:** Date and time of the most recent recording included in the performed archiving.

PTZ

Preset positions can be used in rules, for example, for making a PTZ (Pan/Tilt/Zoom) camera move to a specific preset position when an event occurs, as well as in patrolling, the automatic movement of a PTZ camera between a number of preset positions.

You manage preset positions on the *Presets* tab, which is available only when the selected camera is a PTZ (Pan/Tilt/Zoom) camera. The *Presets* tab will not be available if the selected PTZ camera does not support preset positions.



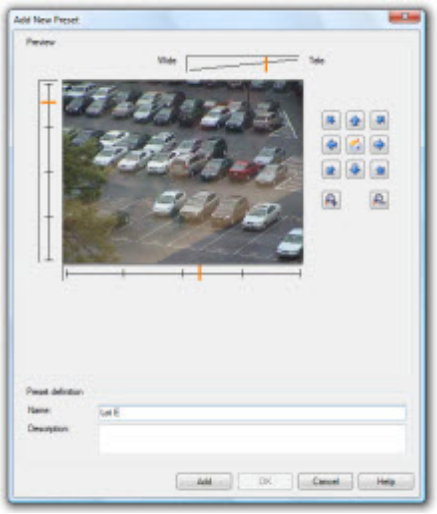
Presets tab, with six preset positions defined

- ## Adding a Preset Position

  Note: As an alternative to defining preset positions in NetEVS, preset positions for some PTZ cameras may also be defined on the camera device itself (typically by accessing a device-specific configuration web page) and imported into NetEVS by selecting *Use presets from device*.

  To add a preset position for the camera in NetEVS, do the following:

  1. In the Presets tab, click the *Add New...* button. This will open the *Add New Preset* window:



2. The *Add New Preset* window displays a preview image from the camera; use the navigation buttons and/or sliders to move the camera to the required preset position. While you do this, you are able to verify the position of the camera through the preview image.

3. Specify a name or number for the preset position in the *Name* field.

   Tip: If typing a name, use a descriptive name; the name of the preset position may later be used in situations where you will not have access to a preview image from the preset position, e.g. when using the preset in a rule.

4. Optionally, type a description of the preset position in the *Description* field.

5. Click *OK*. This will close the *Add New Preset* window, and add the preset position to the *Presets* tab's list of available preset positions for the camera.

- ### How to Use the Navigation Buttons

  The navigation buttons let you move the camera as follows:

  Moves the camera up and to the left

  Moves the camera up

  Moves the camera up and to the right

  Moves the camera to the left

  Moves the camera to its default position

  Moves the camera to the right

  Moves the camera down and to the left

  Moves the camera down

  Moves the camera down and to the right

  Zoom in (one zoom level per click)

  Zoom out (one zoom level per click)

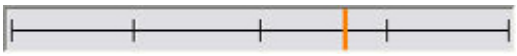
- ### How to Use the Axes Navigation Sliders

  The navigation sliders let you to move the camera along each of its axes. Click inside the sliders to move the sliders' red handles to the required positions.

  The slider for the ***X-axis*** (allowing you to pan left/right) is located immediately below the preview image.

The slider for the ***Y-axis*** (allowing you to tilt the camera up/down) is located immediately to the left of the preview image.

The slider for the ***Z-axis*** (allowing you to zoom in and out) is located immediately above the preview image. The camera will zoom in when you move the slider towards *Tele*, and zoom out when you move the slider towards *Wide*.



Example: *Add New Preset* window's X-axis slider

- ### How to Use the Iris Slider

Note: Iris settings are only available for some cameras.

Iris settings control the amount of light in images. The higher the iris setting, the lighter images will appear.

Click inside the slider to move the slider's red handle to the required position.

- ### How to Use the Focus Slider

Note: Focus settings are only available for some cameras.

Click inside the slider to move the slider's red handle to the required position.

- ## Using Preset Positions from Device

As an alternative to specifying preset positions in NetEVS, preset positions for some PTZ cameras may also be defined on the camera device itself (typically by accessing a device-specific configuration web page.

Such device-defined presets can subsequently be imported into NetEVS by selecting *Use presets from device*.

Note: If importing presets from the camera device, any presets you have previously defined for the camera in NetEVS will be removed; this will affect any patrolling profiles in which these presets are used, as well as any rules in which the affected patrolling profiles are used.

Note: If you later wish to edit such device-defined presets, editing should take place on the camera device.

- ## Assigning a Default Preset Position

If required, you are able to assign one of a PTZ camera's preset positions as the camera's default preset position.

Having a default preset position can be useful because it allows you to define rules specifying that the PTZ camera should go to the default preset position under particular circumstances, for example after the PTZ camera has been operated manually.

To assign a preset position as the default, select the required preset in your list of defined preset positions, then select the *default preset* box below the list.

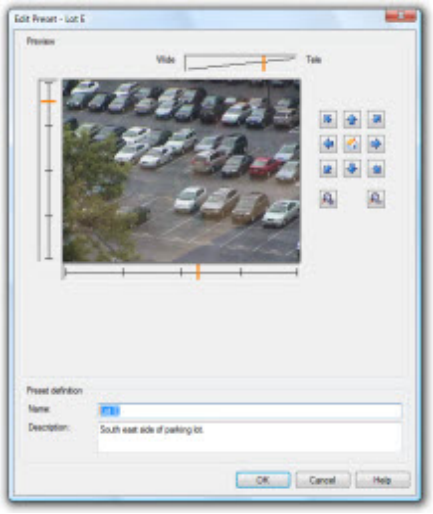
Only one preset position can be the default preset position.

- ## Editing a Preset Position

  To edit an existing preset position defined in NetEVS (presets imported from a device should be edited on the device itself), do the following:

  1. Select the required preset position in the *Presets* tab's list of available preset positions for the camera.

  2. Click the *Edit...* button. This will open the *Edit Preset* window:



Example only; features are camera-dependent

  3. The *Edit Preset* window displays a preview image from the preset position in question; use the navigation buttons and/or sliders to change the preset position as required.

  4. Change the name/number and description of the preset position as required.

     Tip: If using a name, make sure it is descriptive; the name of the preset position may later be used in situations where you will not have access to a preview image from the preset position, e.g. when using the preset in a rule.

  5. Click *OK*.

- ## Removing a Preset Position

  To remove a preset position defined in NetEVS (presets imported from a device should be removed on the device itself), do the following:

  1. Select the preset position in the *Presets* tab's list of available preset positions for the camera.

  2. Click the *Remove* button.

  3. You will be asked to confirm that you want to remove the selected preset. Verify that you are indeed removing the correct preset, then click *Yes*.

  4. The preset is removed from the *Presets* tab's list of available preset positions for the camera.

- ## Testing a Preset Position

1. Select the required preset position in the *Presets* tab's list of available preset positions for the camera.

2. Click the *Activate* button.

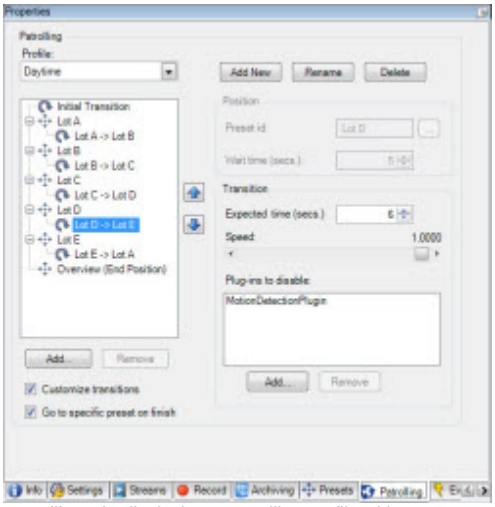
3. The *Presets* tab's preview image will move to the selected preset position.

   Tip: If the preview image does not appear to move to the selected preset position when you click the *Activate* button, verify that preview image does not already show the selected preset position. In that case, try testing another preset position first.

Patrolling is the automatic movement of a PTZ (Pan/Tilt/Zoom) camera between a number of preset positions. Thus, before you are able to work with patrolling, you must have specified at least 2 preset positions for the camera.

You manage patrolling on the *Patrolling* tab, which is available only when the selected camera is a PTZ camera.

Patrolling profiles are the definitions of how patrolling should take place. This includes the order in which the camera should move between preset positions, how long it should remain at each position for, etc. You are able to create an unlimited number of such patrolling profiles and use them in your rules. For example, you may create a rule specifying that one patrolling profile should be used during daytime opening hours, and another during nights.

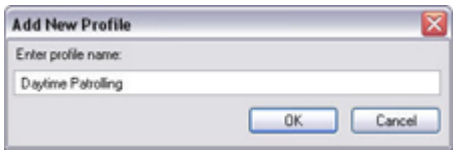


Patrolling tab, displaying a patrolling profile with customized transitions

- ## Adding a New Patrolling Profile

1. Click the *Add New* button. This will open the *Add New Profile* dialog.

2. In the *Add New Profile* dialog, specify a name for the patrolling profile:

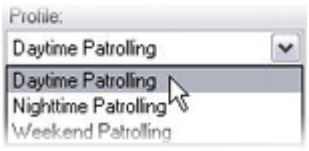


Tip: Use a descriptive name; the name of the patrolling profile may later be used in situations where you will not have access to details about the patrolling profile, e.g. when using the patrolling profile in a rule.

3. Click *OK*. The new patrolling profile will be added to the *Patrolling* tab's *Profile* list. You are now able to specify required preset positions and other settings for the patrolling profile.

- ## Specifying Preset Positions for Use in a Patrolling Profile

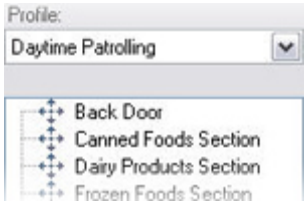
1. Select the required patrolling profile in the *Profile* list:



2. Click the *Add* button. This will open the *Select Preset* dialog.

3. In the *Select Preset* dialog, select the preset positions required for your patrolling profile:

4. Click *OK*. The selected preset positions are added to the list of preset positions for the patrolling profile:



5. The preset position at the top of the list will be used as the first stop when the camera patrols according to the patrolling profile, the preset position in second position from the top will be the second stop, and so forth

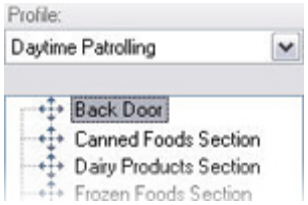
If required, change the sequence by selecting the required preset position and using the up/down buttons:

Tip: If required, you can easily add more preset positions to the list by clicking the *Add* button, or remove unwanted preset positions from the list by selecting the unwanted preset position, then clicking the *Remove* button.

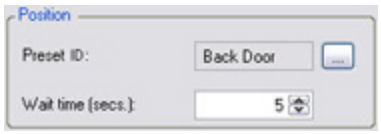
- ## Specifying How Long to Stay at Each Preset Position

When patrolling, the PTZ camera will remain for 5 seconds by default at each preset position specified in the patrolling profile before it moves on to the next preset position. To change the number of seconds for which the PTZ camera will remain at a specific preset position, do the following:

1. Select the required patrolling profile in the *Profile* list.
2. In the list of preset positions for the selected patrolling profile, select the preset position for which you want to change the time:



3. Specify the required time (in number of seconds) in the *Wait time (secs.)* field:



4. If required, repeat for other preset positions.

- ## Customizing Transitions

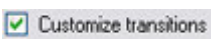
By default, the time required for moving the camera from one preset position to another, known as *transition*, is estimated to be 3 seconds. During this time, motion detection is also disabled on the camera, as irrelevant motion is otherwise likely to be detected while the camera moves between the preset positions.

You can, however, customize the transitions between each of the preset positions in a patrolling profile. You are able to customize the following:

- The estimated transition time
- The speed with which the camera will move during a transition
- Which plug-ins to disable during transition

To customize transitions between preset positions in a patrolling profile, do the following:

1. Select the required patrolling profile in the *Profile* list.
2. Select the *Customize transitions* check box:



This will add transition indications to the list of preset positions for the selected patrolling profile.

3. In the list, select the required transition:

4. Specify the estimated transition time (in number of seconds) in the *Expected time (secs.)* field:

5. Use the *Speed* slider to specify the required transition speed. When the slider is in its rightmost position, the camera will move with its default speed. The more you move the slider to the left, the slower the camera will move during the selected transition.

Tip: A number indicating the exact speed is displayed near the top right corner of the slider. When required, the number (from 0.0001 (very slow) to 1.0000 (default speed)) allows you to define exactly the same custom speed across transitions.

6. In the *Plug-ins to disable* list, specify any plug-ins you want to disable during the selected transition. By default, the plug-in used for motion detection on the camera (*MotionDetectionPlugin*) is disabled in order to avoid irrelevant motion being detected during transition.

   To add a plug-in to the list, click the *Add...* button, and select the required plug-in. This requires that one or more other plug-ins are available, and that they can be disabled.

   To remove a plug-in from the list, for example if you do not want motion detection to be disabled during the transition, select the plug-in and click the *remove* button.

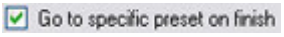
7. Repeat as required for other transitions.

- ## Specifying an End Position

You are able to specify that the camera should move to a specific preset position when patrolling according to the selected patrolling profile ends.

1. Select the required patrolling profile in the *Profile* list.

2. Select the *Go to specific preset on finish* check box:



   This will open the *Select Preset* dialog.

3. In the *Select Preset* dialog, select the required end position, and click *OK*.

Tip: You can select any of the camera's preset positions as the end position, you are not limited to the preset positions used in the patrolling profile.

4. The selected end position is added to the list of preset positions for the selected patrolling profile. When patrolling according to the selected patrolling profile ends, the camera will go to the specified end position.

- ### Renaming an Existing Patrolling Profile

  1. Select the required patrolling profile in the *Profile* list.
  2. Click the *Rename* button. This will open the *Rename Profile* dialog.
  3. In the *Rename Profile* dialog, type a new name for the patrolling profile.

     Tip: Use a descriptive name; the name of the patrolling profile may later be used in situations where you will not have access to details about the patrolling profile, e.g. when using the patrolling profile in a rule.
  4. Click *OK*.

- ### Deleting an Existing Patrolling Profile

  1. Select the required patrolling profile in the *Profile* list.
  2. Click the *Delete* button.
  3. You will be asked to confirm that you want to delete the selected patrolling profile. Verify that you have selected the correct patrolling profile, then click *Yes*.

- ### Specifying Manual PTZ Session Timeout

  Patrolling of PTZ cameras may be interrupted manually by Ocularis Client/Ocularis Client Lite users with the necessary user rights.

  You are able to specify how much time should pass before regular patrolling is resumed after a manual interruption:

  1. In the Management Client's menu bar, select *Tools* > *Options*. This will open the *Options* window.
  2. On the *Options* window's *General* tab, select the required amount of time in the *PTZ manual session timeout* list (default is 15 seconds).

  Note: The setting will apply for all PTZ cameras on your NetEVS system.

If you are going to use a PTZ camera on a video encoder, you must first enable PTZ on the required video encoder channel.

Note: Not all video encoders support the use of PTZ cameras. Even video encoders which support the use of PTZ cameras may require configuration, such as installation of additional drivers (typically through accessing a browser-based configuration interface on the device's IP address) before PTZ cameras can be used.

To enable PTZ on a video encoder's channels, select the required recording server in the Management Client's navigation pane or overview pane, then select the *PTZ* tab in the properties pane.
In order to use PTZ cameras' features, including the ability to pan, tilt, and zoom, operators must belong to a role which gives them the necessary rights.

See About Roles for more information, including step-by-step descriptions of how to assign users to roles and how to specify the rights of roles.

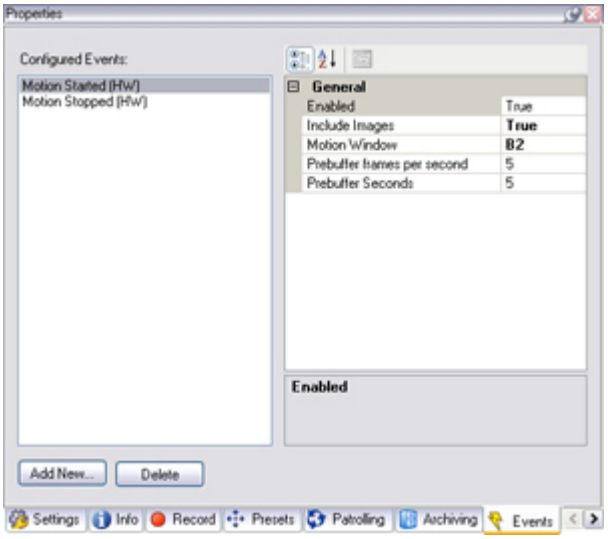
Events

In addition to NetEVS's motion detection, some cameras can themselves be configured to detect motion. If a camera is capable of such detection, the camera's detections can be used as events. Such events can in turn be used when creating event-based rules in NetEVS. Events from such cameras are called hardware configurable events, as they technically occur on the actual camera hardware rather than on the surveillance system.

For such cameras, you are able to manage the hardware configurable events on the *Events* tab. To access the *Events* tab, select the required camera in the overview pane, then select the *Events* tab in the properties pane.

Note: The *Events* tab will only be available if the selected camera supports hardware configurable events.

Note: Even though events based on signals from input and/or output units connected to camera devices are technically also hardware configurable events, they are managed elsewhere. See About Inputs and About Outputs for more information.

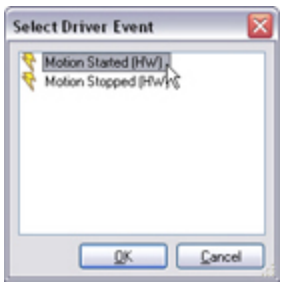


Even when a camera supports hardware configurable events, it is always your decision whether you want to use such events on your NetEVS system. Therefore, you simply add each hardware configurable event you want to be able to use on each camera.

- ### Adding a Hardware Configurable Event

  1. Click the *Add New...* button. This will open the *Select Driver Event* window.

  2. In the *Select Driver Event* window, select the required hardware configurable event:



Note: You can only select one hardware configurable event at a time.

3. Click *OK*. The selected event will be added to the *Events* tab's list of configured events.

4. Click the *Save* button in the Management Client's toolbar:

- ## Specifying Hardware Configurable Event Properties

For each hardware configurable event you have added, you are able to specify properties.

The number of properties you are able to specify depends on the camera in question. In order to work as intended, some or all of the properties must be specified identically on the camera device as well as on NetEVS.

Even though the following list is not exhaustive, you may often be able to specify the following properties:

- ***Enabled*:** Determines whether use of the hardware configurable event is enabled. Select *True* to enable; select *False* to disable.

- ***Include Images*:** Determines whether video should be sent from the camera to NetEVS when the event occurs. Select *True* if video is required; select *False* if video is not required.

- ***Motion Window*:** Many cameras capable of detecting motion can be configured with different motion detection settings for different parts the camera's images. For example, if a camera covers a 2-lane road, different motion detection settings may have been defined for the right lane and left lane area of the camera's images. Such areas are generally known as motion windows.

  Provided one or more motion windows have been defined on the camera device, the *Motion Window* setting lets you specify which motion window to use for the event. When the camera detects motion within the specified motion window, the event will occur.

  When specifying use of a motion window, make sure you type the name of the motion window, exactly as it has been specified on the camera.

  Note: You can only specify one motion window in the field. However, you are able to add more than one instance of an event; see *Using Several Instances* in the following for more information.

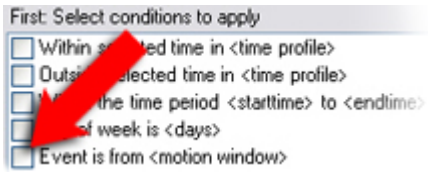
- ## Using Several Instances of a Hardware Configurable Event

You are able to add a hardware configurable event, for example *Motion Started (HW)*, more than once.

The reason for this is that you are able to specify different properties for each instance of the event (see also *Specifying Hardware Configurable Event Properties*).

Example: The camera in question has been configured with 2 motion windows, called A1, and A2. You have added 2 instances of the *Motion Started (HW)* event. In the properties of one instance, you have specified use of motion window A1; in the properties of the other instance, you have specified use of motion window A2.

When you use the hardware configurable event in a rule, you are able to specify that the event should be based on motion detected in a specific motion window in order for the rule to be triggered:



Example: Specifying specific motion window as part of a rule's conditions

- ## Deleting a Hardware Configurable Event

Note: Keep in mind that deleting a hardware configurable event will affect any rules in which the event is used.

To delete a hardware configurable event on the *Events* tab, do the following:

1. In the *Events* tab's *Configured Events* list, select the no longer required event.

   Tip: If there are several instances of the same event, use the properties list in the right side of the tab to verify that you have selected the correct event.

2. Click the *Delete* button.

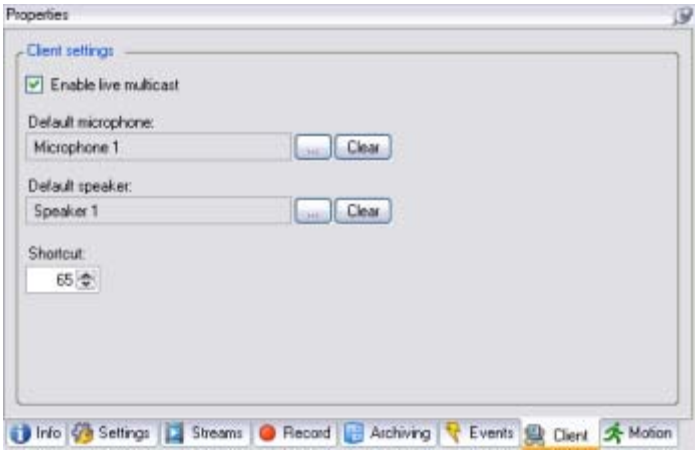
   Note: The selected event will be deleted without further warning.

3. Click the *Save* button in the Management Client's toolbar:

Client

The *Client* tab lets you specify information which will affect access clients' use of the selected camera. To access the *Client* tab, select the required camera in the overview pane, then select the *Client* tab in the properties pane.

Settings on the *Client* tab affect both Ocularis Client and Ocularis Client Lite.



- **Client Settings**
  - ***Enable live multicast*:** NetEVS supports multicasting (sending of single data packets to multiple recipients within a group, thereby saving bandwidth and system resources) of live streams from recording servers to Ocularis Client/Ocularis Client Lite workstations. To enable multicasting of live streams from the selected camera, select the check box.

    Remember that for the feature to work, multicasting must also be configured for the recording server; see Managing Multicasting. If multicasting is not possible, for example due to restrictions on the network or on individual clients, NetEVS will revert to unicasting (sending of separate data packets to separates recipients).

  - ***Default microphone*:** By defining a default microphone, you can determine from which microphone end users should hear recordings when they select the camera in question in their Ocularis Client/Ocularis Client Lite by default. The users can subsequently select another microphone if required.

    Note: although a default microphone may be defined for a camera, it cannot be guaranteed that all Ocularis Client/Ocularis Client Lite users will hear audio from the microphone selected. Some users may not have speakers attached, some users may not have the rights required to listen to audio, etc.

  - ***Default Speaker*:** By defining a default speaker, you can determine through which microphone end users should be able to speak when they select the camera in Ocularis Client/Ocularis Client Lite by default. The users can subsequently select another speaker if required.

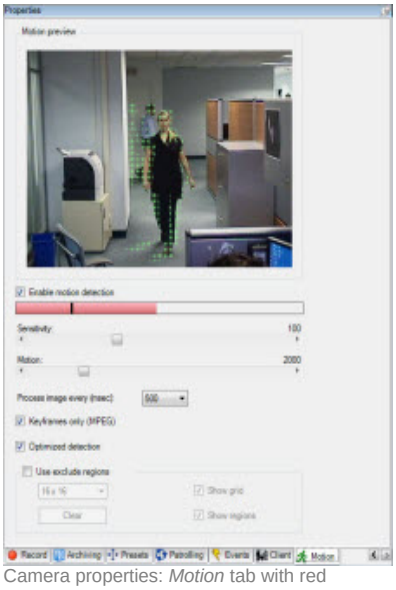
    Note: although a default speaker for a camera may be defined, it cannot be guaranteed that all users will be able to talk through the speaker selected. Some users may not have a microphone attached, some users may not have the rights required to talk through speakers, etc.

Motion Detection

The *Motion* tab lets you enable and configure motion detection for the selected camera. Motion detection configuration is a key element in your NetEVS surveillance solution: Your motion detection configuration may determine when video is recorded, when alerts are generated, when external output (such as lights or sirens) is triggered, etc.

Time spent on finding the best possible motion detection configuration for each camera may therefore help you later avoid unnecessary alerts, etc. Depending on the physical location of the camera, it may be a very good idea to test motion detection settings under different physical conditions (day/night, windy/calm weather, etc.).

Note: Before you configure motion detection for a camera, it is highly recommended that you have configured the camera's image quality settings, such as resolution, compression, etc., on the *Settings* tab. If you later change image quality settings, you should always test any motion detection configuration afterwards.



Camera properties: *Motion* tab with red deflection on the motion indication bar

- ## Enabling and Disabling Motion Detection

  Motion detection is enabled by default. To enable/disable motion detection for a camera, select/clear the *Motion* tab's *Enable motion detection check* box.

  Note: When motion detection is disabled for a camera, any motion detection-related rules for the camera will not work.

- ## Motion Detection Settings

  You are able to specify settings relating to the amount of change required in a camera's video in order for the change to be regarded as motion. You are also able to specify intervals between motion detection analysis, any areas of an image in which motion should be ignored, etc.

  - ### Sensitivity Slider

    The *Sensitivity* slider determines **how much each pixel** in the camera's images must change before it is regarded as motion.

Drag the slider to the left for a higher sensitivity level, and to the right for a lower sensitivity level.

The *higher* the sensitivity level, the less change will be allowed in each pixel before it is regarded as motion.

The *lower* the sensitivity level, the more change in each pixel will be allowed before it is regarded as motion. This way you are able to allow insignificant changes, which should not be regarded as motion.

Pixels in which motion is detected are highlighted in green in the preview image. Select a slider position in which only detections you consider motion are highlighted.

Highlighted motion in the preview image

Tip: Your exact sensitivity slider setting is indicated by a number from 0-300 in the right side of the slider. This way you are able to compare the exact sensitivity slider setting between cameras.

Tip: If you find the concept of motion detection sensitivity difficult to grasp, try dragging the slider to the left towards the highest possible sensitivity (0) position: The more you drag the slider towards the highest possible sensitivity position, the more of the preview image becomes highlighted in green. This is because with a very high sensitivity level even the slightest change in each pixel will be regarded as motion.

- ### Motion Slider

The *Motion* slider determines **how many pixels** in the camera's images image must change before it is regarded as motion.

The selected motion level is indicated by the black vertical line in the motion indication bar above the sliders.

The black vertical line in the motion indication serves as a threshold: When detected motion is above the selected sensitivity level, the bar changes color from green to red, indicating a positive detection.

Motion indication bar deflection changes color from green to red when above the threshold, indicating a positive motion detection

Tip: Your exact motion slider setting is indicated by a number from 0-10.000 in the right side of the slider. This way you are able to compare the exact motion slider setting between cameras.

- **Image Processing Interval**

  You are able to select how often motion detection analysis should be carried out on video from the camera.

  From the *Process image every (msec):* list, select the required interval: every 100 milliseconds (i.e. once every tenth of a second), every 250 milliseconds, every 500 milliseconds, every 750 milliseconds, or every 1000 milliseconds (i.e. once every second). Default is every 500 milliseconds.

  The interval is applied regardless of the camera's frame rate settings.

- **Optimized Detection**

  You are able to optimize motion detection performance for the camera by analyzing only 25% of the image (i.e. every fourth pixel in the image instead of all pixels in the image).

  Using optimized detection will reduce the amount of processing power used to carry out the analysis, but will also mean a less accurate motion detection.

  To use optimized detection, select the *Optimized detection* check box.

- **Ignoring Motion Detection in Parts of Images**

  The *Exclude Regions* settings in the lower part of the *Motion* tab let you disable motion detection in specific areas of a camera's images. Parts of images in which motion should be ignored this way are called *exclude regions*.

  Disabling motion detection in specific areas may help you avoid detection of irrelevant motion, for example if the camera covers an area where a tree is swaying in the wind or where cars regularly pass by in the background.

  To use exclude regions, select the *Use exclude regions* check box.

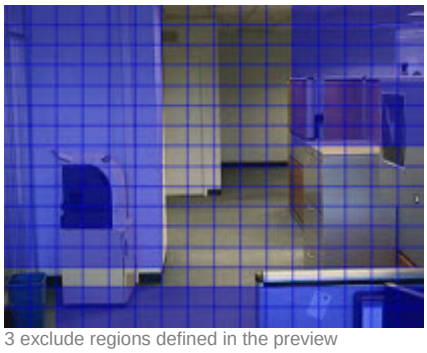
Defining Exclude Regions

When you select the *Use Exclude regions* check box, the preview image will be divided into selectable sections by a grid.

The grid may be visible or hidden, depending on whether the *Show grid* check box is selected or not. The density of the grid is determined by the value in the *Grid size* list. See Grid Features below for detailed information.

To define exclude regions, drag the mouse pointer over the required areas in the preview image while pressing the mouse button down. Left mouse button selects a grid section; right mouse button clears a grid section. Selected areas will be highlighted in blue, provided the *Show regions* check box is selected.

You are able to define as many exclude regions as you require.



3 exclude regions defined in the preview window. In this case, the grid is visible.

The blue exclude area indications will only appear in the preview image on the *Motion* tab, not in any other preview images in the Management Client or access clients.

Grid Features

Show Grid

When the *Show grid* check box is selected (default), the preview image will feature a grid indicating the division of the preview image into selectable sections. The grid may help you when selecting exclude regions in the preview image.

The density of the grid is determined by the value selected in the *Grid size* list.

Showing the grid is not a requirement for selecting exclude regions; even without the grid you are able to select exclude regions as described above. Hiding the grid may provide a less obscured view of the preview image.

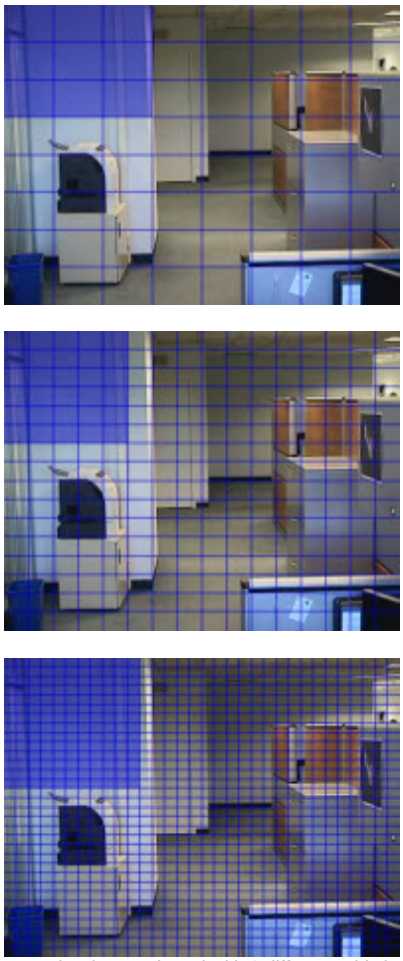
Grid Size

The value selected in the *Grid size* list determines the density of the grid, regardless whether the grid is shown or not.

Select between the values 8×8 (i.e. a grid dividing the image into eight sections along the X-axis and eight sections along the Y-axis), 16×16, or 32×32.

With a grid of 8×8, the image will be divided into relatively few sections for you to select for exclude regions. Each section will be relatively large; you will not be able to define very detailed exclude regions. With a grid size of 32×32, the image will be divided into relatively many sections for you to select for exclude regions. Each section will be relatively small, enabling you to define more detailed exclude regions.

Examples of 8×8, 16×16, and 32×32 grids respectively:



A preview image viewed with 3 different grid sizes.
The area marked in blue is a selected exclude region.

Show Regions

When the *Show regions* check box is selected (default), exclude regions will be highlighted in blue in the preview image.

Hiding exclude regions may provide a less obscured view of the preview image. However, under normal circumstances it is highly recommended that you keep the *Show regions* box selected; otherwise exclude regions may exist without you or your colleagues being aware of it.

The blue exclude area indications will only appear in the preview image on the *Motion* tab, not in any other preview images in the Management Client or access clients.

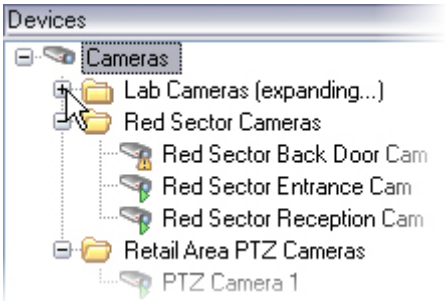
Tip: If using device groups (see Managing Cameras), you can configure motion detection for all cameras in a device group in one step. Note, however, that some motion detection settings must be configured individually for each camera. This is the case with exclude regions (areas in which not to use motion detection), as these are very likely to vary from camera to camera.

Device Groups

You are able to group different types of devices (cameras, microphones, speakers, inputs, outputs) on your NetEVS system by using device groups. The use of device groups has several benefits:

- Device groups help you maintain an intuitive overview of devices on your system
- You are able to specify common properties for all devices within a device group in one step
- When dealing with roles, you are able to specify common security settings for all devices within a device group in one step
- When dealing with rules, you are able to apply a rule for all devices within a device group in one step

You can add as many device groups as required; you are completely free to decide which devices to include. The only restriction is that you cannot mix different types of devices (for example cameras and speakers) in a device group.



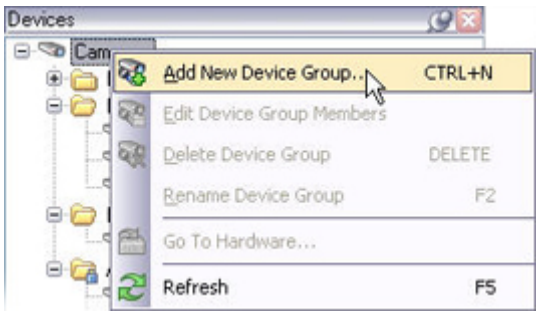
Example: cameras grouped into device groups

If a device group contains 400 devices or more, the *Settings* tab is unavailable for viewing and editing. For camera groups, the *Streams* tab is also unavailable for editing and viewing if the group contains 400 cameras or more. When you click the plus sign next to the device folder, your NetEVS system will load the contents of the device folder, which may take a few seconds. While expanding, the text *(expanding...)* is displayed next to the folder name.

The examples below are based on grouping cameras into device groups, but the principle applies for microphones, speakers, inputs and outputs as well.

- **Adding a Device Group**

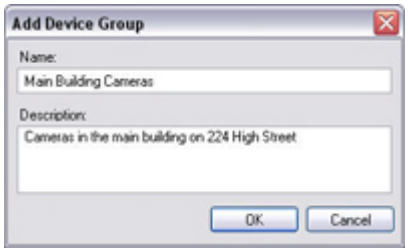
  1. In the overview pane, right-click the item under which you wish to create the new device group.
  2. Select *Add New Device Group*:



Tip: You may also simply press CTRL+N on your keyboard.

The *Add Device Group* dialog will appear.

3. In the *Add Device Group* dialog, specify a name and description of the new device group:



The description will later appear when pausing the mouse pointer over the device group in the device list.

4. Click *OK*. A folder representing the new device group is added to the list. You are now able to specify which devices should belong in the device group.

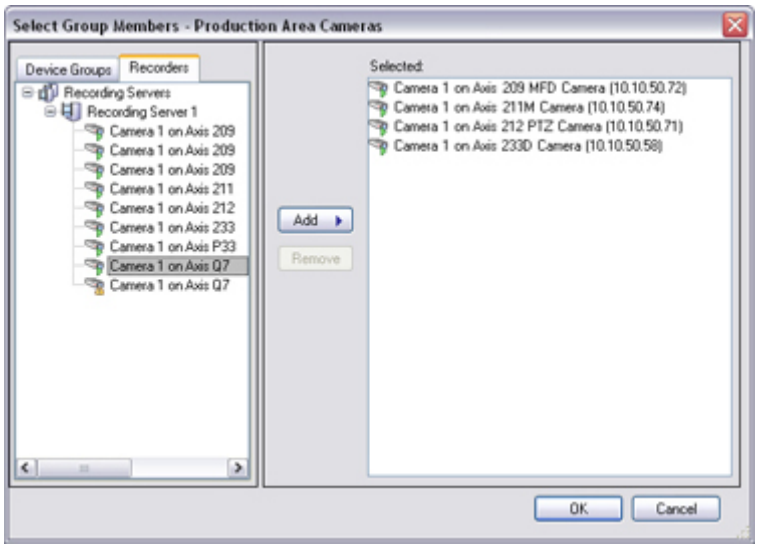
Tip: If required, you are able to add device groups as sub-groups under other device groups, as illustrated in the following example:

- ## Specifying Which Devices to Include in a Device Group

1. In the overview pane's device list, right-click the required device group folder.
2. Select *Edit Device Group Members.* The *Select Group Members* window will appear.
3. In the *Select Group Members* window, select either ...:
    - The *Device Groups* tab, which lists devices based on existing device groups.

      Tip: A device can be a member of more than one device group.

    - The *Recording Servers* tab, which lists devices based on which recording servers the devices belong on.
4. Select the devices you wish to include, and click the *Add* button. This will copy the selected devices to the *Selected* box:


Select Group Members - Production Area Cameras
Device Groups
Recorders
Recording Servers
Recording Server 1
Camera 1 on Axis 209
Camera 1 on Axis 209
Camera 1 on Axis 209
Camera 1 on Axis 211
Camera 1 on Axis 212
Camera 1 on Axis 233
Camera 1 on Axis P33
Camera 1 on Axis Q7
Camera 1 on Axis Q7
Add
Remove
Selected:
Camera 1 on Axis 209 MFD Camera (10.10.50.72)
Camera 1 on Axis 211M Camera (10.10.50.74)
Camera 1 on Axis 212 PTZ Camera (10.10.50.71)
Camera 1 on Axis 233D Camera (10.10.50.58)
OK
Cancel

Tip: You may also double-click a device to copy it from one box to the other, or you may simply drag devices between the two boxes.

Tip: To select several devices in one step, press the CTRL key on your keyboard while selecting.

5. Click *OK*. The selected devices will be added to your device group on the device list.

- ## Specifying Common Settings for All Devices in a Device Group

When using device groups, you are able to quickly specify common properties for all devices within a given device group:

1. In the overview pane's device list, click the required device group.

   In the properties pane, all properties *which are available on all of the device group's devices* will be listed, grouped on tabs.

2. Specify the required common properties.

   Note: Properties not available on *all* of the devices in the device group will not be listed; such properties must still be configured individually for each device.

   Note: If the device group contains 400 or more devices the *Settings* tab is unavailable for viewing and editing. For camera groups the *Streams* tab is also unavailable for viewing and editing if the group contains 400 cameras or more.

   Tip: The *Settings* tab has convenient functionality for quickly switching between settings for the device group and settings for individual devices.

- ## Deleting a Device Group

1. In the overview pane's device list, right-click the unwanted device group folder.

2. Select *Delete Group*.

   Tip: You may also simply press DELETE on your keyboard.

3. You will be asked to confirm that you want to delete the device group. Verify that you are deleting the correct device group, then click *Yes*.

Note: Remember that you have only deleted the device group itself. If you wish to delete IP hardware—such as a camera—from your NetEVS system, do so on a recording server level (see Managing Hardware).

Events

Events are a central element in NetEVS. Events are primarily used for triggering actions and alerts; these are configured through rules .

> Example: You create a rule which specifies that in the *event* of detected motion, the surveillance system should take the *action* of starting recording of video from a particular camera.

For a list of the events you are able to use in rules, see the Events Overview.

User-defined Events

If the event you require is not on the list, you can create your own user-defined events. Such user-defined events can be useful if you want to integrate other systems with your surveillance system.

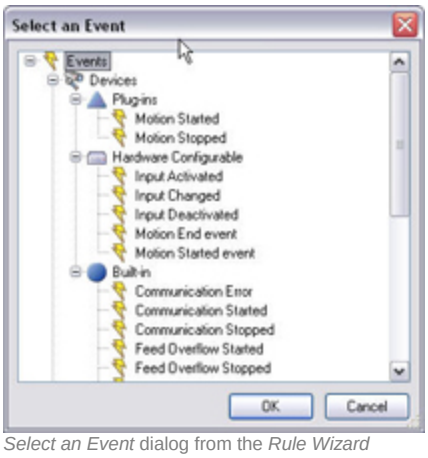
> Example: With user-defined events, you can use data received from a third-party access control system as events in NetEVS; the events can subsequently trigger actions. This way, you can, for example, begin recording video from relevant cameras when somebody enters a building.

User-defined events can also be used for making it possible for end users to manually trigger events while viewing live video in Ocularis Client/Ocularis Client Lite.

Hardware Configurable Events

Some hardware is capable of creating events themselves. For example, some cameras are able to detect motion or static/moving objects, and their detections can be used as events in NetEVS. Such events must obviously be configured on the hardware before they can be used in NetEVS, therefore they are called hardware configurable events. Read more about hardware configurable events for cameras, inputs and microphones respectively.

When creating an event-based rule in the *Rule Wizard* (see *About Rules* and *Managing Rules*), you are able to select between a number of different events.



Select an Event dialog from the *Rule Wizard*

In order for you to get a good overview, selectable events are listed in groups according to whether they are:

- Related to plug-ins: Plug-ins
- Dependent on hardware configuration: Hardware Configurable
- Built into NetEVS itself: Built-in
- Related to recording servers: Recording Servers
- User-defined events: User-defined

Each type of event is described below:

Event	Description
Events Related to Plug-ins	
Motion Started	Occurs when NetEVS detects motion in video received from cameras. **Note:** This type of event requires that NetEVS's motion detection is enabled for the cameras to which the event will be linked. Exactly what constitutes motion depends on the motion detection settings specified for individual cameras in NetEVS. **Note:** In addition to NetEVS's motion detection, some cameras are—depending on configuration of the camera hardware—themselves able to detect motion. Such camera-detected motion detection can also be used in NetEVS rules. Such events are called *Hardware Configurable*, as they do not work until configured on the camera hardware itself. See Events dependent on hardware configuration below.
Motion Stopped	Occurs when motion is no longer detected in received video. See also the notes in the description of the *Motion Started* event above.
Events Dependent on Hardware Configuration The configuration on which these events depend may only be possible all some hardware. For example, only selected cameras may be able to detect tampering or temperature changes.	
Audio Falling	Occurs when the audio signal on an audio-enabled device is falling. For exact information about what constitutes a falling and a rising signal respectively, refer to documentation for the device in question. **Note:** This type of event requires that at least one device on your system has an audio unit connected. The event will not work until configured on the hardware itself.
Audio Passing	Occurs when the state of an audio-enabled device is changed, regardless of which state the device is changed to. **Note:** This type of event requires that at least one device on your system has an audio unit connected. The event will not work until configured on the hardware itself.

Audio Rising	Occurs when the audio signal on an audio-enabled device is rising. For exact information about what constitutes a falling and a rising signal respectively, refer to documentation for the device in question. **Note:** This type of event requires that at least one device on your system has an audio unit connected. The event will not work until configured on the hardware itself.
Images Received	Occurs when pre-alarm images are received from a camera. Pre-alarm images are available for selected cameras only; such cameras are capable of sending of one or more single still images from immediately before an event took place to the surveillance system via SMTP e-mail. **Note:** This type of event requires that at least one camera on your system supports pre-alarm images. The event will not work until configured on the hardware itself. **Tip:** Consider using prebuffering, defined on the Record tab, as an alternative to pre-alarm images.
Input Activated	Occurs when an external input unit connected to an input port on a device is activated. **Note:** This type of event requires that at least one device on your system has an external input unit connected to an input port. The event will not work until configured on the hardware itself.
Input Changed	Occurs when the state of an external input unit connected to an input port on a device is changed, regardless of which state the external input unit is changed to. **Note:** This type of event requires that at least one device on your system has an external input unit connected to an input port. The event will not work until configured on the hardware itself.
Input Deactivated	Occurs when an external input unit connected to an input port on a device is deactivated. **Note:** This type of event requires that at least one device on your system has an external input unit connected to an input port. The event will not work until configured on the hardware itself.
Motion Started (HW)	Occurs when a camera detects motion in its video stream. In addition to NetEVS's motion detection, some cameras are—depending on configuration of the camera hardware—themselves able to detect motion. Such camera-detected motion detection can also be used in NetEVS rules. **Note:** The event will not work until configured on the camera hardware itself. Exact use of camera-based motion detection depends on the configuration of the cameras in question.

Motion Stopped (HW)	Occurs when a camera no longer detects motion in its video stream. See also the description of the *Motion Started* event above. **Note:** The event will not work until configured on the camera hardware itself. Exact use of camera-based motion detection depends on the configuration of the cameras in question.
Tampering	Occurs when a device detects that it is being tampered with. **Note:** The event will not work until configured on the hardware itself. Exact use of tampering detection depends on the configuration of the devices in question.
Temperature	Occurs when a device detects a temperature change, that a certain temperature is exceeded, or similar. **Note:** The event will not work until configured on the hardware itself. Exact use of temperature detection depends on the configuration of the devices in question.
Video Lost	Occurs when a device detects that a video signal is lost. **Note:** The event will not work until configured on the hardware itself. Exact use of this type of detection depends on the configuration of the devices in question.
Events Built into NetEVS Itself	
Communication Error	Occurs when a connection to a device is lost; or when an attempt is made to communicate with a device, and the attempt is unsuccessful.
Communication Started	Occurs when communication with a device is successfully established.
Communication Stopped	Occurs when communication with a device is successfully stopped.
Feed Overflow Started	Feed overflow occurs when a recording server is unable to process received video as quickly as specified in the configuration, and therefore is forced to discard some of the images. **Tip:** This rare event can be used for triggering actions that will help you avoid the problem, e.g. for lowering the recording frame rate.
Feed Overflow Stopped	Occurs when feed overflow (see description of the *Feed Overflow Started* event) ends.
Live Client	Occurs when a user of Ocularis Client/Ocularis Client Lite requests a live

Feed Requested	stream from a device. **Note:** The event occurs upon the request—even if the client user's request subsequently turns out to be unsuccessful, for example because the client user does not have the rights required for viewing the requested live feed or because the feed is for some reason stopped.
Output Activated	Occurs when an external output unit connected to an output port on a device is activated. **Note:** This type of event requires that at least one device on your system has an external input unit connected to an output port.
Output Changed	Occurs when the state of an external output unit connected to an output port on a device is changed, regardless of which state the external input unit is changed to. **Note:** This type of event requires that at least one device on your system has an external input unit connected to an output port.
Output Deactivated	Occurs when an external output unit connected to an output port on a device is deactivated. **Note:** This type of event requires that at least one device on your system has an external input unit connected to an output port.
Live Client Feed Terminated	Occurs when a user of Ocularis Client/Ocularis Client Lite no longer requests a live stream from a device.
Manual PTZ Session Started	Occurs when a manually operated PTZ session (as opposed to a PTZ session based on scheduled patrolling or automatically triggered by an event) is started on a camera. **Note:** This type of event requires that the cameras to which the event will be linked are PTZ (Pan/Tilt/Zoom) cameras.
Manual PTZ Session Stopped	Occurs when a manually operated PTZ session (as opposed to a PTZ session based on scheduled patrolling or automatically triggered by an event) is stopped on a camera. **Note:** This type of event requires that the cameras to which the event will be linked are PTZ (Pan/Tilt/Zoom) cameras.
Recording Started	Occurs when recording is started.
Recording Stopped	Occurs when recording is stopped.

Settings Changed	Occurs when settings on a device are successfully changed.
Settings Changed Error	Occurs when an attempt is made to change settings on a device, and the attempt is unsuccessful.
Events Related to Recording Servers	
Archive Available	Occurs when an archive for a recording server becomes available after having been unavailable (see *Archive Unavailable* below).
Archive Unavailable	Occurs when an archive for a recording server becomes unavailable, for example if the connection to an archive located on a network drive is lost. When this is the case, it will not be possible to archive recordings. You can use the event to, for example, trigger a notification profile so an e-mail notification is automatically sent to relevant people in your organization.
Database Disk Full	Occurs when a database disk is full. A database disk is considered to be full when there is less than 500 MB of space is left on the disk: In order to prevent operating system failures due to insufficient disk space, the oldest records in the database will automatically be deleted for all cameras recording on the disk in question when less than 500 MB of space is left on the disk containing the database, regardless of any time or size limits specified for the database. This will help ensure that at least 500 MB of disk space will be available for operating system use.
Database Repair	Occurs if a database becomes corrupted, in which case NetEVS will automatically attempt 2 different database repair methods: a fast repair and a thorough repair.
Database Storage Area Available	Occurs when a storage area for a recording server becomes available after having been unavailable (see *Database Storage Area Unavailable* below). You can, for example, use the event to start recording if it has been stopped by a *Database Storage Area Unavailable* event (see below).
Database Storage Area Unavailable	Occurs when a storage area for a recording server becomes unavailable, for example if the connection to a storage area located on a network drive is lost. When this is the case, it will not be possible to store recordings. You can use the event to, for example, stop recording and trigger a notification profile so an e-mail notification is automatically sent to relevant people in your organization.
Failover Started	Occurs when a failover server takes over from a recording server. A failover server is a spare recording server which can take over if a regular recording server becomes unavailable.

Failover Stopped	Occurs when a recording server becomes available again, and is able to take over from a failover server.

User-defined Events

A number of events custom-made to suit your system may also be selectable. Such user-defined events can be used for:

- Making it possible for end users to manually trigger events while viewing live video in the Ocularis Client/Ocularis Client Lite.
- Countless other purposes. For example, you may create user-defined events which will occur if a particular type of data is received from a device.

For information about how to define user-defined events in the Management Client, see Managing User-defined Events.

User-defined Events

User-defined events are events which are custom-made to suit your system. Like other events, user-defined events can be used in rules in order to trigger actions. Thus, when a user-defined event occurs, a rule can trigger that one or more actions should take place on the NetEVS system.

> Example: When user-defined event 37 occurs, PTZ camera 224 should stop patrolling and go to preset position 18.

Through roles, you define which of your users should be able to trigger the user-defined events; see Specifying the Rights of a Role for more information.

User-defined events can be used in two ways, simultaneously if required:

- **For Providing the Ability to Manually Trigger Events in Ocularis Client Lite**
  In this case, user-defined events make it possible for end users to manually trigger events while viewing live video in Ocularis Client Lite. Thus, when a user-defined event occurs because it is manually triggered by an Ocularis Client Lite user, a rule can trigger that one or more actions should take place on the NetEVS system.

- **For Providing the Ability to Trigger Events through API**
  In this case, user-defined events can be triggered from outside the surveillance system. Using user-defined events this way requires that a separate API (Application Program Interface; a set of building blocks for creating or customizing software applications) is used when triggering the user-defined event. Authentication through Active Directory is required for using user-defined events this way. This ensures that even though the user-defined events can be triggered from outside the surveillance system, only authorized users will be able to do it.

  Also, user-defined events can via API be associated with meta-data, defining certain devices or device groups. This is highly usable when using user-defined events to trigger rules: you avoid having a rule for each device, basically doing the same thing. Example: A company uses access control, having 35 entrances, each with an access control device. When an access control device is activated, a user-defined event is triggered in NetEVS. This user-defined event is used in a rule to start recording on a camera associated with the activated access control device. It is defined in the meta-data which camera is associated with what rule. This way the company does not need to have 35 user-defined events and 35 rules triggered by the user-defined events; a single user-defined event and a single rule are enough.

When user-defined events are used this way, you may not always want them to be available for manual triggering in Ocularis Client Lite. You can use roles to define which user-defined events should be visible in Ocularis Client Lite; see Specifying the Rights of a Role for more information.

Whichever way you choose to use user-defined events, each user-defined event must first be added through the Management Client:

- ### Adding a New User-defined Event

  1. In the Management Client's navigation pane, expand *Rules and Alerts*, and select *User-defined Events*.
  2. In the overview pane, right click *Events* and select *Add New User-defined Event...*
  3. Type a name for the new user-defined event, and click *OK*. The newly added user-defined event will now appear in the list in the overview pane.

     Note: Do **NOT** use special characters when naming user-defined events. While these will be accepted by the system, they will cause problems when using NetEVS with Ocularis Base.

     User rights permitting (see roles), the user-defined event can now be manually triggered from Ocularis Client Lite. Already connected Ocularis Client Lite users must log out and log in again before the user-defined event will be visible.

     Remember to create one or more rules specifying what should take place when the custom event occurs.

- ### Editing the Name of an Existing User-defined Event

  1. In the Management Client's navigation pane, expand *Rules and Alerts*, and select *User-defined Events*.
  2. In the overview pane, select the required user-defined event.
  3. In the properties pane, overwrite the existing name.
  4. Click the Save button in the Management Client's toolbar.

     Already connected Ocularis Client Lite users must log out and log in again before the name change will be visible.

- ### Deleting an Existing User-defined Event

  Note: Remember that deleting a user-defined event will affect any rules in which the user-defined event is used.

  Note: A deleted user-defined event will not disappear from Ocularis Client Lite immediately; only after Ocularis Client Lite users log out.

  1. In the Management Client's navigation pane, expand *Rules and Alerts*, and select *User-defined Events*.

2. In the overview pane, right click the unwanted user-defined event, and select *Delete New User-defined Event...*

3. You will be asked to confirm that you want to delete the user-defined event; if you are sure, click the *Yes* button.

Failover Servers

A failover server is a spare recording server which can take over if a regular recording server becomes unavailable. It should therefore always be installed on a separate computer. A failover server has 2 services:

- A *Failover Server* service, which handles the processes of taking over from the regular recording server. By default, this service is always running since it constantly checks the state of relevant recording servers.

- A *Recording Server* service, which enables the failover server to act as a recording server while the regular recording server is unavailable. This service is only started when required, i.e. when the failover server should take over from the regular recording server. Starting this service typically takes a couple of seconds, but may take longer depending on local security settings, etc.

A failover server **must** be able to communicate with all cameras of the recording server(s) from which it should be able to take over.

- #### Installing Failover Servers

  For information about installing failover servers, see Failover Server Installation.

- #### Configuring Failover Servers in the Management Client

  For information about configuring failover servers in the Management Client, see Managing Failover Servers.

  Once failover servers are configured, you can assign them to recording servers on the Failover Tab.

- #### How Does a Failover Server Know when to Take Over?

  Failover servers poll (i.e. regularly check the state of) relevant recording servers every 0.5 seconds. If a recording server does not reply within 5 seconds after it was polled, the recording server is considered to be unavailable, and the failover server will take over.

- #### How Long Does it Take for a Failover Server to Take Over?

  It will take 5 seconds plus the time it takes for the failover server's Recording Server service to start.

- #### What Happens when a Recording Server Becomes Available Again?

  When a recording server becomes available again, it will automatically take over from the failover server, and recordings stored by the failover server will automatically be merged into the regular recording server's databases.

  How long the merging process takes will depend on the amount of recordings to merge, on network capacity, etc.

  Note: During the merging process, it will not be possible to browse recordings from the period during which the failover server took over.

What if the failover server must take over from another recording server during the merging process? In that case, it will postpone the merging process with recording server A, and take over from recording server B. When recording server B becomes available again, the failover server will take up the merging process with recording server A, after which it will begin merging with recording server B.

- ### Will Recordings Be Lost?

  A failover solution does not provide complete redundancy. It is, however, a very reliable way of minimizing downtime.

  Starting a failover server takes 5 seconds plus the time it takes for the failover server's Recording Server service to start. During this period it will not be possible to store recordings, neither will it be possible to view live video from affected cameras.

  When the regular recording server becomes available again, the Failover Server service will make sure that the recording server is ready to store recordings again. Only then is the responsibility for storing recordings handed back to the regular recording server. Thus, loss of recordings at this stage of the process is negligible.

- ### Is there a Failover Solution for Failover Servers?

  Setting up one failover server as backup for another failover server is not necessary. This is because you do not allocate particular failover servers to take over from a regular recording server; rather you allocate failover groups.

  A failover group must contain at least one failover server, but you can add as many failover servers as required to a failover group. Provided a failover group contains more than one failover server, there will be more than one failover server capable of taking over from the regular recording server.

  For more information about configuring failover groups, see Managing Failover Servers.

  For more information about selecting the failover groups you require for a recording server, see the description of the Management Client's Failover Tab.

- ### Will Archiving Work while a Failover Server Has Taken Over?

  Any archiving will work even when a failover server has taken over from a regular recording server, provided the archiving destination is on a network location which is accessible by the failover server.

  If the archiving destination is at an inaccessible location—such as on the unavailable recording server itself or on an unavailable network drive—archiving will not work as long as the destination is unavailable.

- ### Failover-Related Events

  NetEVS features two failover-related events: *Failover Started* and *Failover Stopped.* You can use these when creating rules. These events are further described in the Events Overview.

A failover server is a spare recording server which can take over if a regular recording server becomes unavailable. A failover server is therefore always installed on a separate computer.

- ### Adding and Grouping Failover Servers

  Failover servers are installed through an installation wizard, just like regular recording servers; see Failover Server Installation for more information.

Overview of Failover Servers in Management Client

Once failover servers are installed, they become visible in the Management Client: In the navigation pane, select *Servers,* then *Failover Servers* and view a list of installed failover servers in the overview pane.

Tip: If a failover server does not become visible in the Management Client, verify that the failover server has been configured with the correct IP address/hostname of the Management Server. Also verify that the user account under which the Failover Server service runs has access to your NetEVS system with administrator rights.

Failover Servers Are Grouped

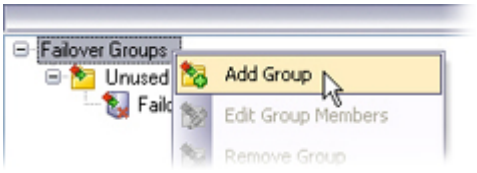
Failover servers are always grouped; a group can contain one or more failover servers. Grouping has a clear benefit: When you later specify which failover servers should be able to take over from a recording server, you do not select a particular failover server; rather you select a group of failover servers. If the selected group contains more than one failover server, this gives you the security of being able to have more than just one failover server ready to take over if the recording server becomes unavailable.

Initially, your failover servers will all appear in the group *Unused Failover Servers*.

A red **x** on a failover server icon indicates that the failover server in question is currently not in use.

Creating Failover Groups

You can create as many new failover groups as required: In the overview pane, right-click *Failover Groups* and select *Add Group* from the menu that appears:



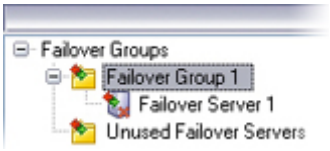
Specify a name and a description (optional) of your new group, then click *OK*.

Adding Failover Servers to a Group

In the overview pane, right-click the group to which you want to add one or more failover servers, then select *Edit Group Members* from the menu that appears. This will open the *Select Group Members* window. From the *Available* box in window's left side, select the required failover servers(s), then click the *Add* button to move the selected failover server(s) to the *Selected* box in the right side of the window:

Tip: Alternatively, drag and drop failover servers between the 2 boxes.

When ready, click *OK*. The required failover servers now belong to the group:



Note: A failover server can only be a member of one group at a time.

Editing Failover Group Properties

Select the required failover group in the overview pane.

- On the *Info* tab, you can edit the name and description of the selected failover group.
- On the *Sequence* tab, you can edit the sequence in which failover servers within the group should take over from unavailable recording servers.

- ### Enabling Failover Servers

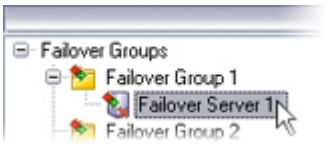
A failover server must be enabled before it will be able to take over from regular recording servers:

1. In the overview pane, select the required failover server.

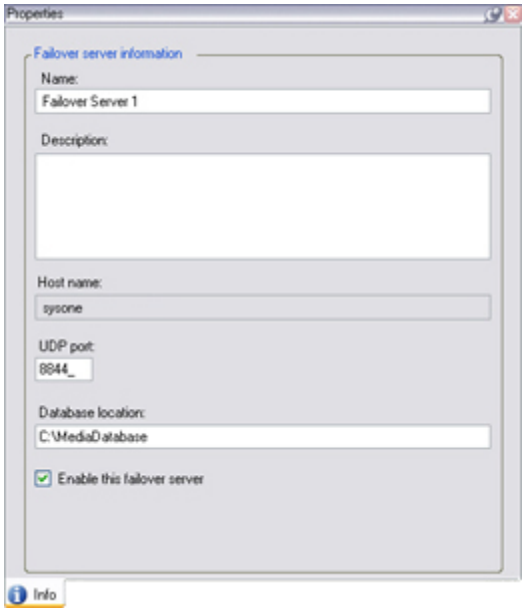
2. In the properties pane, select *Enable this failover server*.

- ### Editing Failover Server Properties

1. In the overview pane, select the required failover server.



2. On the *Info* tab in the properties pane, you are able to edit the following:



- ***Name:*** Name of the failover server, as it will appear in the Management Client, in logs, etc.
- ***Description*****:** Optional description of the failover server, for example a description of the server's physical location.
- ***Host name*****:** Non-editable field displaying the network address of the failover server.
- ***UDP port*****:** The port number used for communication between failover servers. By default, port 8844 is used.

  Tip: The port used by the failover server for polling (i.e. regularly checking) the state of relevant recording servers is by default port number 11000. If required, you can change that port number on the recording server's Failover Tab.
- ***Database location*****:** This field specifies the path to the database which the failover server should use for storing recordings while taking over from a regular recording server. When the regular recording server becomes available again, recordings stored by the failover server will be transferred to the regular recording server, and merged with recordings there.

  Note: The database path cannot be changed while the failover server is taking over from a regular recording server. Changes you make will be applied when the failover server is no longer taking over from a regular recording server.

- ***Enable this failover server*:** A failover server must be enabled before it will be able to take over from regular recording servers. Select box to enable the failover server, clear box to disable it.

  IMPORTANT: A disabled failover server will not be able to take over from regular recording servers.

  On the *Network* tab, you are able to define the failover server's public IP address, etc. This is relevant especially if using NAT (Network Address Translation) and port forwarding. See the description of the *Network* tab for a regular recording server for more information.

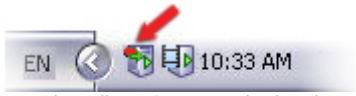
3. If you have made changes to the properties, save your changes by clicking the *Save* button in the Management Client's toolbar:

- ## Assigning Failover Servers to Recording Servers

  In the Management Client, you select a recording server, then use the Failover tab to specify which failover group(s) should take over from the recording server in question. On the Failover tab, you even have the flexibility of being able to assign a primary and a secondary failover group to each recording server.

When you have installed a failover server, you are able to check the state of the NetEVS Failover Server service by looking at the NetEVS Failover Server service icon in the notification area *of the computer running the failover server*. The notification area icon also lets you start and stop the Failover Server service, view status messages, etc.

Tip: The notification area, also known as the *system tray*, it is located at the far right of the Management Server computer's Windows taskbar.



Example: Failover Server service icon in notification area; note that failover servers also have a Recording Server service (other icon)

- ## Failover Server Service State Icons

  The following icons represent the states of the NetEVS Failover Server service:

  Failover Server service is enabled and started. The failover server must be enabled through the Management Client (see Managing Failover Servers), and the service must be started, in order for the failover server to be able to take over from regular recording servers.

  Failover Server service is stopped. To start the Failover Server service, right-click the icon and select *Start Failover Server Service*.

  Failover Server service is starting. Appears when the Failover Server service is in the process of starting. Under normal circumstances, the icon will after a short while change to *Failover Server service is enabled and started*.

  Failover Server is disabled or running offline. Typically appears if:

  - the failover server is not enabled through the Management Client; see Managing Failover Servers.

- the Failover Server service is running but the Management Server service is not
- the failover server's information about the Management Server address is incorrect (see *Changing the Management Server Address* below for more information)
- the user account under which the Failover Server service runs has no access to your NetEVS system. **How to troubleshoot this ...**

  During installation of the failover server, you specified a user account under which the Failover Server service should run. For the failover server to work, it is important that the user account in question has access to your NetEVS system with administrator rights.

  To verify whether the user account has access to your NetEVS system, do the following:

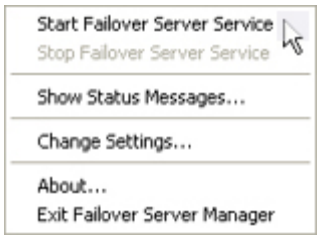
  1. In the NetEVS Manager's navigation pane, expand *Security* and select *Roles*.
  2. In the overview pane's roles list, select the *Administrators* role.
  3. In the properties pane's role settings list, verify that the required user is listed.

     If the user is not listed, add the required user to the *Administrators* role by clicking the *Add...* button below the role settings list. For more information, see Assigning Users & Groups to a Role.

- ## Starting the Failover Server Service

  The On-Net Surveillance Systems, Inc. Failover Server service starts automatically. If you have stopped the service manually, you can start it the following way:

  1. Right-click the notification area's failover server icon.
  2. From the menu that appears, select *Start Failover Server Service*:



- ## Stopping the Failover Server Service

  Note: While the NetEVS Failover Server service is stopped, the failover server will not be able to take over from regular recording servers.

  1. Right-click the notification area's Failover Server service icon.
  2. From the menu that appears, select *Stop Failover Server Service.*

- ### Changing the Management Server Address

  The failover server must be able to communicate with your NetEVS system's Management Server. You therefore specify the IP address/hostname of the Management server during the installation of the failover server.

  Should you later need to change the address of the Management Server, you do it the following way:

  Note: In order to be able to change the Management Server address, the NetEVS Failover Server service must be stopped. While the Failover Server service is stopped, the failover server will not be able to take over from regular recording servers.

  1. Right-click the notification area's failover Server service icon.
  2. From the menu that appears, select *Stop Failover Server Service.*
  3. Right-click the notification area's Failover Server service icon again.
  4. From the menu that appears, select *Change Settings...* The *Failover Recording Server Settings* window appears. You are able to change the following setting:

     - **Management Server hostname / IP address:** Lets you specify the IP address (example: 123.123.123.123) or host name (example: ourserver) of the NetEVS Management Server with which the failover server should be able to communicate.

- ### Viewing Status Messages

  1. Right-click the notification area's NetEVS Failover Server service icon.
  2. From the menu that appears, select *Show Status Messages.* The *Failover Recording Server Status Messages* window appears, listing time-stamped status messages.

- ### Viewing Version Information

  Knowing the exact version of your NetEVS Failover Server service is an advantage if you need to contact product support.

  1. Right-click the notification area's Failover Server service icon.
  2. From the menu that appears, select *About...*
  3. A small dialog opens. The dialog will show the exact version of your Failover Server service.

Fisheye

Note: Use of the fisheye technology requires a dedicated fisheye camera.

Fisheye is a technology that allows viewing of 360-degree panoramic images through an advanced lens. The Fisheye Tab lets you configure the fisheye functionality of a camera.

Configuration

If the camera is mounted on a ceiling, you can adjust the behavior of the navigation buttons to reflect this by selecting the *Ceiling mount* check box.

The camera's fisheye functionality is configured by adjusting its fisheye view field, indicated by a green ellipse in the preview image, so it encloses the actual image area of the fisheye lens. Press the *Auto Calculate* button to do this automatically.

It is also possible to adjust the fisheye view manually. You do this by specifying a number of values which will be used by the fisheye technology for converting the elliptic image into an ordinary rectangular image.

You can set the ellipse's X-radius, Y-radius, X-center, and Y-center by using the arrow buttons to adjust the ellipse.

Preview

In the preview section of the *Fisheye* tab you can set a particular position in the fisheye-rendered view as the camera's home position: Navigate to the required position, using the navigation buttons, then click the *Set as Home Position* button.

The navigation buttons let you move the camera as follows:

Moves the fisheye-rendered view up and to the left

Moves the fisheye-rendered view up

Moves the fisheye-rendered view up and to the right

Moves the fisheye-rendered view to the left

Moves the fisheye-rendered view to its default position

Moves the fisheye-rendered view to the right

Moves the fisheye-rendered view down and to the left

Moves the fisheye-rendered view down

Moves the fisheye-rendered view down and to the right

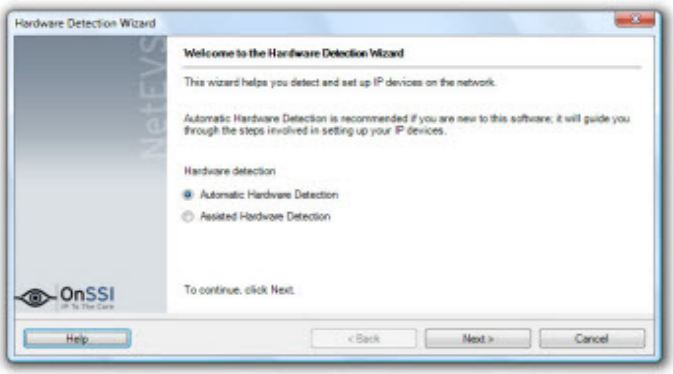
Zooms in (one zoom level per click)

Zooms out (one zoom level per click)

Hardware Detection Wizard

The *Hardware Detection Wizard* helps you detect IP hardware devices, such as cameras and video encoders, on your network and add them to recording servers on your NetEVS system.

To access the *Hardware Detection Wizard*, expand the *Servers* folder in the Management Client's navigation pane and select the *Recording Server* node, then in the overview pane right-click the required recording server and select *Hardware Detection Wizard...*


Hardware Detection Wizard
Welcome to the Hardware Detection Wizard
This wizard helps you detect and set up IP devices on the network.
Automatic Hardware Detection is recommended if you are new to this software; it will guide you through the steps involved in setting up your IP devices.
Hardware detection
Automatic Hardware Detection
Assisted Hardware Detection
To continue, click Next.
OnSSI
Help
< Back
Next >
Cancel

Hardware Detection Wizard opening page

The wizard offers you 2 ways of detecting and adding hardware devices: With *automatic hardware detection*, NetEVS automatically scans for available hardware within one or more specified IP address ranges. With *assisted hardware detection*, you manually specify the IP address of each required device. Both options offer the possibility of automatically detecting the correct hardware drivers.

Tip: If you are new to NetEVS, use automatic hardware detection; it will guide you through each of the steps involved in detecting and adding your IP devices.

- **Automatic Hardware Detection**

  1. On the first step of the *Hardware Detection Wizard*, select *Automatic Hardware Detection* and click *Next*.

  2. The wizard will then suggest one or more IP address ranges on which to detect devices. The number of suggested ranges will depend on the number of network interface cards on the recording server. By default, NetEVS will scan the IP address range(s) for devices on port 80.

     If the suggested IP address ranges are acceptable, simply go to step 3. Occasionally, you may want to remove or edit the suggested IP address ranges, change the default port number, or add further IP address ranges:

     - **Removing an Unwanted IP Address Range**

       To remove an IP address range, select the unwanted IP address range and click the *Remove* button. You will be asked to confirm that you want to remove the IP address range in question.

     - **Editing an IP Address Range**

       To edit an IP address range, select the required range and click the *Edit* button.

       This will open the *Add IP Range to Scan* dialog, which lets you edit the IP address range by changing the beginning and end of the IP address range as

required.

Tip: The beginning and end IP address may be identical, allowing you to only scan for a single device, if required.

If scanning for devices which support TCP/HTTP—most devices do—keep the *Use TCP port scanning* box selected.

You are also able to change the port number to scan (default is port 80).

When NetEVS detects a device, it will automatically access the device with the device's factory default user name and password. If one or more devices within the specified IP address range require a non-factory default user name and/or password, specify such user names and passwords one at a time by clicking the *Add...* button.

Example: IP address range and additional user name and password defined

Click *OK* to return to the wizard.

- ## Adding an IP Address Range

To add a new IP address range, click the *Add* button.

This will open the *Add IP Range to Scan* dialog, which lets you edit the IP address range by changing the beginning and end of the IP address range as required.

Tip: The beginning and end IP address may be identical, allowing you to only scan for a single device, if required.

You are also able to specify which port number to scan (default is port 80).

If scanning for devices which support TCP/HTTP—most devices do—keep the *Use TCP port scanning* box selected.

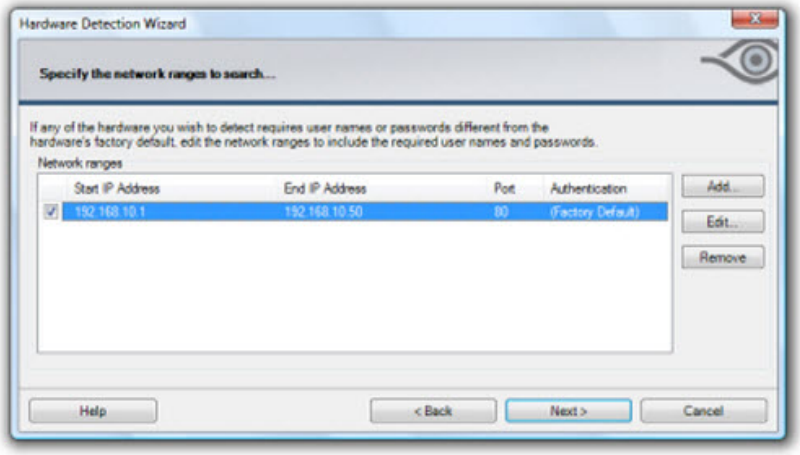
When NetEVS detects a device, it will automatically access the device with the device's factory default user name and password. If one or more devices within the specified IP address range require a non-factory default user name and/or password, specify such user names and passwords one at a time by clicking the *Add...* button.

Example: IP address range and additional user name and password defined

When ready, click *OK* to return to the wizard.

Note that you cannot add more than 100 devices to a Recording Server at a time. If you need to add more than 100 devices, simply scan several times.

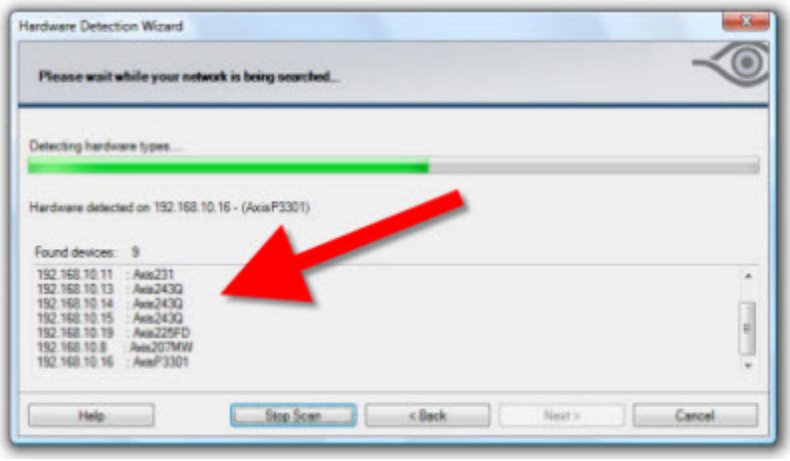
3. When ready, the wizard lists all the IP address ranges you want to scan.



Example: A single IP address range has been defined

Click *Next*.

4. The wizard searches for devices within the defined IP address ranges. Depending on the size of the IP address ranges, and whether they are on the local network or not, this may take a while. While searching, the wizard generates a list of the cameras it detects.

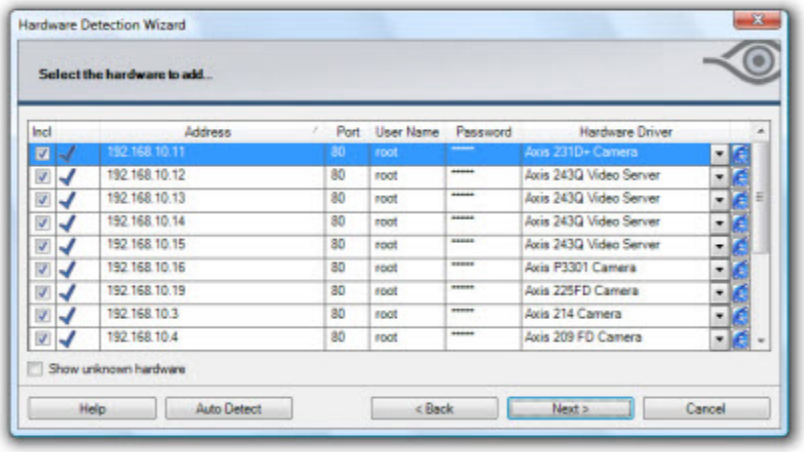


Example: Arrow indicates list generated while wizard searches IP ranges

Tip: Detection may take a while, especially if large IP ranges must be searched. You can interrupt the search at any time by clicking the *Stop Scan* button. Any cameras detected up to this point will be remembered by the wizard.

Also: you may need to add camera user names and passwords if they were changed from the factory defaults. If no cameras are found, click *Back* and then click *Edit*. Click *Add* to include additional User names and Passwords to be used in the search.

5. When the wizard has finished searching, it will list detected devices. Initially, the list will only contain *known hardware*, i.e. devices for which the wizard is automatically able to detect a hardware driver. The wizard is able to automatically detect hardware drives for a very large number of devices.


Hardware Detection Wizard
Select the hardware to add...
Incl
Address
Port
User Name
Password
Hardware Driver
192.168.10.11 80 root ***** Axis 231D+ Camera
192.168.10.12 80 root ***** Axis 243Q Video Server
192.168.10.13 80 root ***** Axis 243Q Video Server
192.168.10.14 80 root ***** Axis 243Q Video Server
192.168.10.15 80 root ***** Axis 243Q Video Server
192.168.10.16 80 root ***** Axis P3301 Camera
192.168.10.19 80 root ***** Axis 225FD Camera
192.168.10.3 80 root ***** Axis 214 Camera
192.168.10.4 80 root ***** Axis 209 FD Camera
Show unknown hardware
Help
Auto Detect
< Back
Next >
Cancel

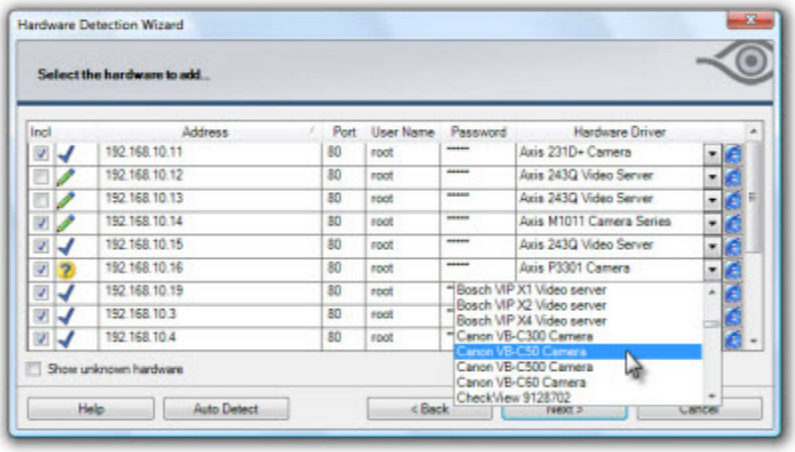
Example: Wizard has automatically detected hardware drivers for a number of cameras

Tip: For a preview image from camera devices in the list, click the browser button to access the camera's default web page. You may be asked to provide the user name and password for the device when accessing it this way.

6. **Optional:** To see any devices for which the wizard has not automatically been able to detect a hardware driver, select the *Show unknown hardware* check box.

   This will include any *unknown hardware* in the list. Such unknown devices will be

indicated by question mark icon: . For such devices, you are able to manually specify user name, password and hardware driver.



Example: Manually specifying hardware driver for a device in the defined IP address range. This will seldom be necessary, as the wizard can automatically detect drivers for many devices. Note the green pencil icon indicating the device being manually specified.

Remember to select the *Include* check box for each manually specified device. Click *Next*.

7. On the last step of the wizard, verify the information, then click *Finish*.

8. The devices are added to the recording server, and will appear in the Management Client's lists:

Example of added devices listed in overview pane

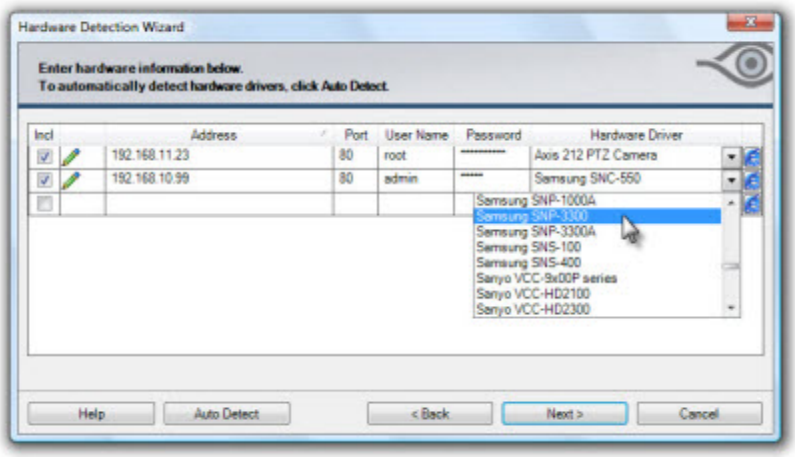
- **Assisted Hardware Detection**

1. On the first step of the *Hardware Detection Wizard*, select *Assisted Hardware Detection* and click *Next*.

2. The wizard will then ask you to enter information about the required hardware. For each required device, specify IP address, port number (if other than the default port 80), user name, password, and hardware driver.

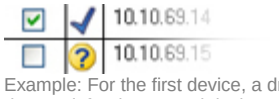
Tip: If you do not specify a user name and password, the factory default user name and password for the device will automatically be added when you make your selection in the *Hardware Driver* column.

Remember to select the *Include* check box for each required device.



Example: Manually selecting hardware driver for a device. Often, the wizard can automatically detect the driver.

Tip: Provided you have specified a valid user name and password, hardware drivers can often be automatically detected: Simply click the *Auto Detect* button. If the driver is detected, a check mark ✓ will appear in the second column. If the driver cannot be detected, a question mark will appear, in which case you should manually select the required driver.



Example: For the first device, a driver could automatically be detected; for the second device, a driver could not be automatically detected, and must be selected manually

Tip: For a preview image from a camera device in the list, click the browser button to access the camera's default web page. You may be asked to provide user name and password for the device when accessing it this way.

3. Repeat for each required device. Click *Next.*

4. On the last step of the wizard, verify the information. Then click *Finish*.

5. The required devices are added to the recording server, and will appear in the Management Client's lists.

Help System

The NetEVS Management Client features a comprehensive built-in help system. To use the built-in help system, simply press the F1 key on your keyboard. When you press F1, the built-in help system will open in a separate window, allowing you to easily switch between help and the Management Client itself.

As an alternative to pressing the F1 key, click the toolbar's *Help...* button:

The built-in help system is context sensitive. This means that when you press F1 or click the *Help...* button while working in a particular part of the Management Client, the help system automatically displays a help topic describing that part, or a task related to that part.

Navigating the Built-in Help System

You are always able to freely navigate between the help system's contents. To do this, simply use the help window's four tabs: *Contents*, *Search*, *Favorites* and *Glossary,* or use the links inside the help topics.

- ***Contents Tab*:** Lets you navigate the help system based on a tree structure. Many users will be familiar with this type of navigation from, for example, Windows Explorer. To go straight to the help system's *Contents* tab, click *Contents...* button in the Management Client's toolbar.

- ***Search Tab*:** Lets you search for help topics containing particular terms of interest. For example, you can search for the term *zoom* and every help topic containing the term *zoom* will be listed in the search results. Clicking a help topic title in the search results list will open the required topic. To go straight to the help system's *Search* tab, click the *Search...* button in the Management Client's toolbar.

- ***Favorites Tab*:** Lets you build a list of your favorite help topics. Whenever you find a help topic of particular interest to you, simply add the topic to your favorites list. Then you can access the topic with a single click—also if you close the help window and return to it later.

- ***Glossary Tab*:** What is a video encoder? What does PTZ mean? The *Glossary* tab provides a glossary of common surveillance and network-related terms. Simply select a term to view a corresponding definition in the small window below the list of terms.

Links in Help Topics

The actual content of each help topic is displayed in the right pane of the help window. Help topic texts may contain various types of links, notably so-called expanding drop-down links.

Clicking an expanding drop-down link will display detailed information. The detailed information will be displayed immediately below the link itself; the content on the page simply expands. Expanding drop-down links thus help save space.

- **Example of expanding drop-down link**
  ➡**Example**➡This is an example of text shown below an expanding drop-down link. To hide this text, simply click the expanding drop-down link again.

Tip: If you wish to quickly collapse all texts from expanding drop-down links in a help topic, simply click the title of the topic on the help system's *Contents* tab.

Printing Help Topics

To print a help topic, navigate to the required topic and click the help window's *Print* button. When you click the *Print* button, a dialog box may ask you whether you wish to print the selected topic only or all topics under the selected heading. When this is the case, select *Print the selected topic*, and click *OK*.

Tip: When printing a selected help topic, the topic will be printed as you see it on your screen. Therefore, if a topic contains expanding drop-down links, click each required drop-down link to display the text in order for it to be included in your printout. This allows you to create targeted printouts, containing exactly the amount of information you require.

Input

On many devices you are able to attach external units to input ports on the device. Input units are typically external sensors. Such external sensors may, for example, be used for detecting if doors, windows, or gates are opened. Input from such external input units is treated as events by NetEVS.

Such events can be used in rules. For example, you could create a rule specifying that a camera should begin recording when an input is activated, and stop recording 30 seconds after the input is deactivated.

Devices' input ports are automatically detected when you add the devices to your NetEVS system through the Management Client's Hardware Detection Wizard, regardless of which of the wizard's detection options you use.

Read more about input management in Managing Input.
You have two entry points for managing input:

- In the Management Client's navigation pane, expand *Devices*, select *Inputs*, expand the required device group, and select the required input. If no device groups are available, you must first group your input: See Using Device Groups for information about creating groups as well as adding input to your groups.

- In the Management Client's navigation pane, expand *Servers* and select the *Recording Server* node, then expand the required recording server in the overview pane and select the required input.

Note: Before you specify use of external input and output units on a device, verify that sensor operation is recognized by the device. Most devices are capable of showing this in their configuration interfaces, or via CGI script commands. Also check the NetEVS release notes to verify that input- and output-controlled operations are supported for the devices and firmware used.

- **Enabling Input**

  When inputs are detected with the *Hardware Detection Wizard*, they are disabled by default. You can activate inputs when needed. If a device has several inputs you can enable one, some, or all of them as required.

  1. In the navigation pane, expand *Servers* and select *Recording Servers.*
  2. In the overview pane expand the relevant recording server, and find the device on which the input is placed.
  3. Right-click the required input, and select *Enabled*.

- ## Specifying Input Properties

Each input typically has several properties. You can access these properties in 2 ways:

- In the navigation pane, expand *Devices,* and select *Inputs*. Then in the overview pane expand the required inputs folder and select the required input.

  - or -

- In the overview pane, select a device group to define settings for all inputs in the group, or expand a device group, and select the required input.

The properties of the selected input, or the common properties for all inputs in a selected device group, will be displayed on the following tabs:

- ### Info Tab

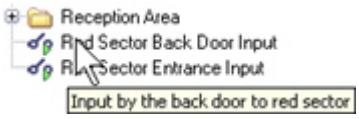
The *Info* tab lets you view and edit basic information about an input. The *Info* tab contains the following fields:

- ***Name:*** Name of the input. The name will be used whenever the input is listed in NetEVS and access clients. A name is not compulsory, but highly recommended. The name does not have to be unique.

  To change the name, overwrite the existing name and click the *Save* button in the Management Client's toolbar.

  Tip: If you change the name, it will be updated throughout NetEVS. This means that if the name is used in, for example, a rule, the name will automatically change in the rule as well.

- ***Description*:** Description of the input. A description is not compulsory. The description will appear in a number of listings within NetEVS. For example, the description will appear when placing the mouse pointer over the input's name in the overview pane.



  To specify a description, type the description and click the *Save* button in the Management Client's toolbar.

- ***Hardware name*:** Name of the hardware to which the input unit is attached. The field is non-editable. However, the hardware name can be changed by clicking the *Go To* button next to the field. Clicking the *Go To* button will take you to the hardware information, where the name is editable.

- ***Unit number*:** Non-editable field, displaying the unit on which the input can be found on the hardware. For hardware capable of having more than one input unit attached, the unit number will typically indicate the number of the input port to which the input is attached. For hardware with, for example, 4 input ports, the numbers will typically range from *0* to *3*.

- ### Settings Tab

The *Settings* tab lets you verify or edit key input settings, for a selected input, or for all inputs within a selected device group. If the selected device group contains 400 or more

inputs, the *Settings* tab will be unavailable for viewing and editing because changing settings for so many devices in one step takes too long time.

Note: The content of the *Settings* tab is determined entirely by the devices in question, and is thus likely to vary depending on the input selected.

The content of the *Settings* tab may vary, but you will typically see the following property:

- ***Input rises on:*** Lets you define whether the input signal should be considered rising on *Circuit closed* or *Circuit open*. The value of this setting is used on the input's *Events* tab, where you define properties for input events: *Input Rising* event, *Input Falling* event, and *Input Changed* event. See the description of the *Events tab* in the following.

The content of the *Settings* tab is displayed in a table, in which the first column lists the available settings, and the second column lists the value of each setting.

You are typically able to change the values:

1. Select the row with the property you want to change
2. Click the button to the right of the properties column.
3. Change the value of the property.
4. In the Management Client's toolbar, click the *Save* button.

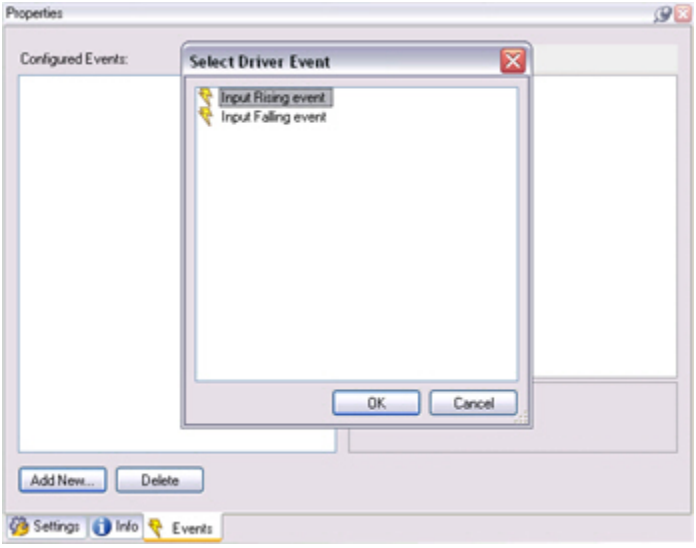
When you have changed a setting to a non-default value, the value will appear in **bold**. When a value must be within a certain range, for example between 0 and 100, the allowed range will be displayed in the grey information box below the settings table.

- ### Events Tab

On the *Events* tab you define events based on changes of the input's state, from circuit opened to circuit closed or the reverse order. The events you define can subsequently be used in rules.

Note: You can define events for a selected input, but not for all inputs in a device group.

1. In the navigation pane, expand *Devices*, and select *Inputs*.
2. In the overview pane, select the required input.
3. Select the *Events* tab, and click the *Add New...* button.



4. In the *Select Driver Event* dialog, select the appropriate option (*Input Rising event*, *Input Falling event*, or *Input Changed event*).

5. Click *OK*. Your selected type of input event will now appear in the *Events* tab's *Configured Events* list.

To the right of the list, settings for the selected input event are displayed in a table. The table's first column lists available settings, the second column lists the value of each setting.

Note: The settings on the *Events* tab is determined entirely by the devices in question, and is thus likely to vary depending on the input selected.

The content of the table may vary, but you will typically see the following property:

- ***Enabled:*** Select between *True* (enabled), or *False* (disabled).

You are typically able to change the values:

1. Select the row with the property you want to change.

2. Click the button to the right of the properties column.

3. Change the value of the property.

4. In the Management Client's toolbar, click the *Save* button.

When you have changed a setting to a non-default value, the value will appear in **bold**. When a value must be within a certain range, for example between 0 and 100, the allowed range will be displayed in the grey information box below the settings table.

Viewing the Current State of an Input

The change of an input's state is regarded as an event by NetEVS. Events can be used in rules and hereby trigger actions when the state of an input is changed.

See Defining Input-Related Rules for more information about how to include an input event in a rule.

To view the current state of an input in the Management Client, do the following:

1. In the navigation pane, expand *Devices*, and select *Inputs*.
2. In the overview pane, expand the required inputs folder and select the required input.

   Tip: You may select a group of inputs to view the current status of all inputs in the group.
3. Information about the current status of the selected input is presented in the preview pane.

   When an input is deactivated, it is shown by a gray indicator:

   When the input is activated, the indicator lights up green:

- ### Input List's Status Icons

  The following icons are used to indicate the status of each input in the input list:

  ***Input is enabled*:** An enabled input can communicate with the recording server and can be activated automatically through a rule.

  Input is communicating

  ***Input is temporarily stopped*:** Often shown when the input is communicating with NetEVS while the input is being disabled or enabled.

  ***Input is disabled*:** A disabled input cannot be started automatically through a rule and will not be able to communicate with the recording server.

  Input requires attention

  Status unknown

To be able to automatically trigger an action activated by an input, you must—after you have enabled the input and created an event based on the input—include the input in a rule. See Managing Inputs for more information.

For example, you may create a rule specifying that a camera should record if a particular input is activated.

For the following example to be useful to you, you should have a general knowledge about how to manage rules. See also About Rules for an introduction to rules, or How to Create Typical Rules for other step-by-step descriptions of how to create rules.

- **Defining a Rule where an Input Triggers an Action**

  In the *Rules* feature, all registered external input (activation, deactivation, or change) is treated as an event. Based on an event, you are able to specify a wide variety of actions to take.

  To define a rule specifying that an input should result in one or more actions (for example the starting of recording on a certain camera), do the following:

  1. Start the *Rule Wizard*.
  2. In *Rule Wizard*'s step 1 (*Step 1: Type of rule*) select the *Perform an action on <event >* option.
  3. Click the *event* link in the initial rule description.
  4. In the *Select an Event* dialog's *Hardware Configurable* group, select the appropriate option for your rule: *Input Activated*, *Input Changed*, or *Input Deactivated*. Click *OK* to confirm your selection.
  5. Click the *devices/recording servers/management servers* link in the initial rule description.
  6. In the *Select Devices and Groups* dialog select the required input. Click *OK* to confirm your selection.
  7. Click *Next* to continue to the *Rule Wizard*'s step 2 (*Step 2: Conditions*) and select, if necessary, a condition.
  8. Continue to step 3 (*Step 3:Actions*) and select one or more actions.
  9. Click *Next* to continue to step 4 (*Step 4: Stop criteria*), and select a stop criteria.
  10. Click *Next* to continue to step 5 (*Step 5: Stop actions*), and select a stop action.
  11. Click *Finish* to save the rule.

  Tip: When you create a rule based on an input event, the actions you specify in the rule do not have to relate to the device on which the external input was changed; you can easily specify that the actions should take place on one or more different devices—even across recording servers.

Layout

You can rearrange panes in the Management Client, *NetEVS-Manager*, and thus customize its look to suit your needs. If you rearrange the panes, you can always reset the entire layout to the Management Client's default layout.

- **Resizing Panes**

  You can resize panes by dragging the borders of the panes:

  1. Place your mouse pointer over a border.
  2. When the pointer becomes a double-headed arrow, drag the border in the required direction.

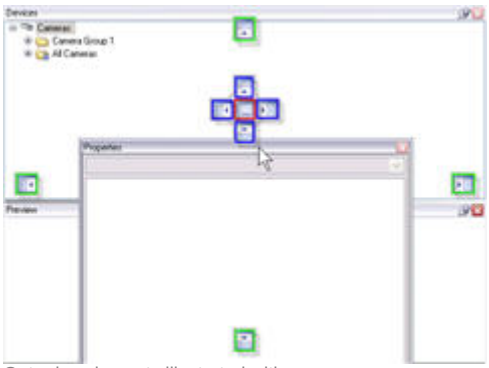
The size of the content inside the panes stays the same regardless of the size of the panes, with one exception: the larger the preview pane is, the larger preview images and state information will appear.

- ## Moving Panes

You can move a pane to a different position either as a floating pane or to a docked position, by clicking on a pane's title bar and dragging it with the mouse.

The position and whether the pane becomes a floating pane or docked depend on where you release the mouse button. See the topics below for more information.

The Management Client offers some layout elements that help you control the new position of the pane. The layout elements are available when you drag a pane.

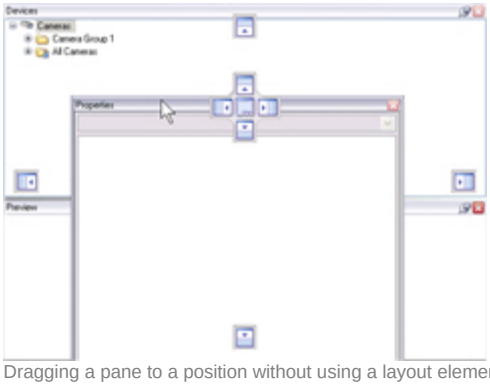


Outer lay elements illustrated with green
Inner layout elements illustrated with blue
Center layout element illustrated with red

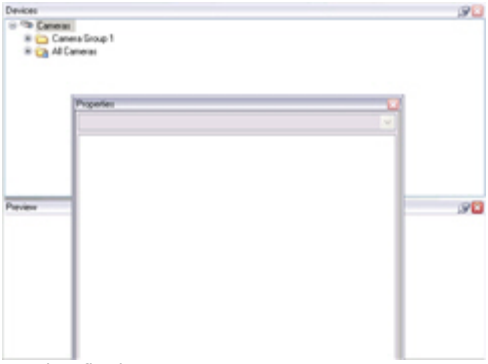
For more information about how you use the layout elements when moving panes see the topics below:

- ### Floating Panes

To move a pane to a floating pane, drag the pane to its new position *without* using one of the layout elements.



Dragging a pane to a position without using a layout element



Result: A floating pane

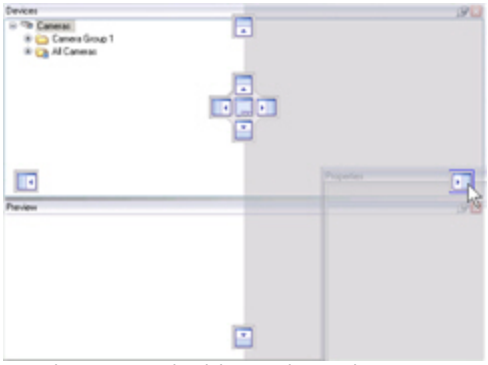
- ## Moving a Pane to a Docked Outer Position

If you move a pane to a docked outer position, it fills the area with a horizontal or vertical split that goes from top to bottom or left to right.

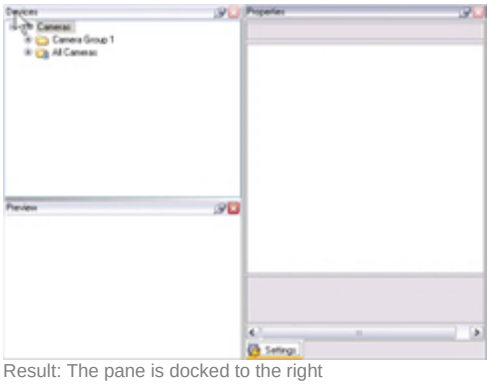
2. Drag the pane to one of the outer layout elements.

   Tip: Before you release the mouse, the pane's new position is indicated by a gray area.

2. Release the mouse to dock the pane at its current position.



Dragging a pane to the right outer layout element



Result: The pane is docked to the right

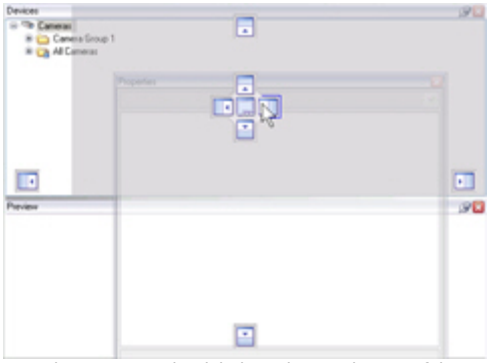
- ### Moving a Pane to a Docked Inner Position

  If you drag the pane to one of the inner layout elements, the pane will be positioned along one side of one of the other panes.

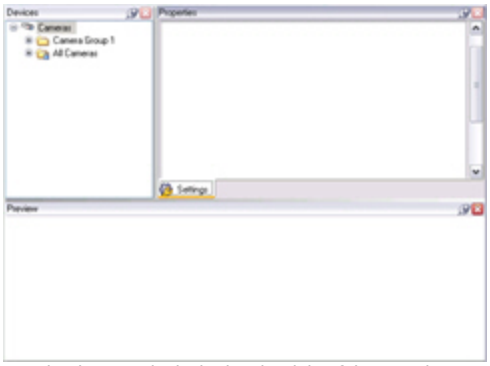
  1. Drag the pane to one of the inner layout elements.

     Tip: Before you release the mouse, the pane's new position is indicated by a gray area.

  2. Release the mouse to dock the pane at its current position.



Dragging a pane to the right inner layout element of the overview pane



Result: The pane is docked to the right of the overview pane

- ### Moving a Pane to a Shared Position

  You can move a pane into another pane's position so 2 or more panes share the same position:

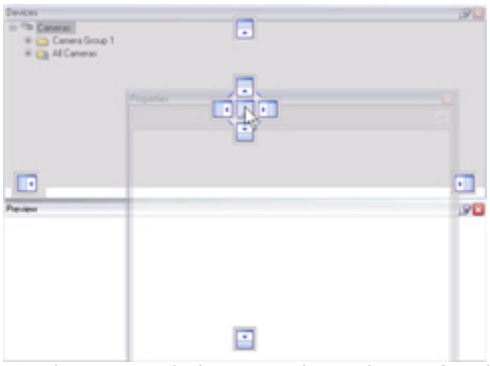
  1. Drag the pane to the center layout element of the pane which position you want to share.

The center layout element

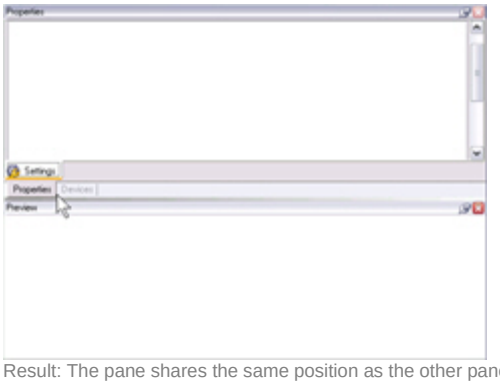
     Tip: Before you release the mouse, the pane's new position is indicated by a gray area.

  2. Release the mouse to dock the pane at its current position.

Tip: To view the content of the panes, click the tabs on the bottom of the shared position.



Dragging a pane to the inner center layout element of another pane



Result: The pane shares the same position as the other pane

- ### Splitting Shared Positions

  If you do not want a pane to share a position with another pane, do this:

  1. Click the tab of the relevant pane and drag it to a new position.

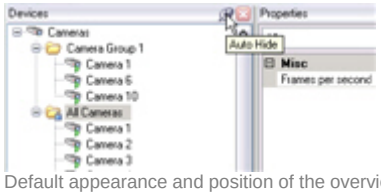
     The pane's new position can be a docked position or a floating pane.

  2. Release the mouse to place the pane at its current position.

- ## Using Auto-Hide

  You can auto-hide panes. An auto-hidden pane is available as a tab to the right or left of the previous position of the pane. When you place your mouse pointer over the tab, the content of the pane slides out. As soon the cursor is positioned outside the pane, it slides back.

  To auto-hide a pane click the *Auto Hide* pushpin in the title bar of the pane you want to auto-hide.

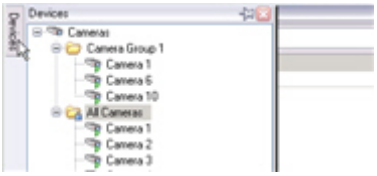


Default appearance and position of the overview pane.

The overview pane is hidden and available through a tab to the left.

Do the following to show and open an auto-hidden pane again:

1. Place your mouse pointer over the tab of the auto-hidden pane to show the pane.
2. Click the *Auto Hide* pushpin in the title bar of the pane to dock the pane.



- ### Resetting to Default Layout

  If you have moved, resized and auto-hidden panes and now want to reset the entire layout of the panes in the Management Client to their default settings, do the following:

  1. From the Management Client's *View* menu, select *Reset Application Layout*.
  2. Restart the application.

- ### Toggling Preview Pane On and Off

  You can close the preview pane when working with recorders and devices by clicking the *Close* button in the right side of the preview pane's title bar.

  To reopen the preview pane select *Preview Window* from the Management Client's *View* menu.

  Tip: If the preview pane displays images from many cameras at a high frame rate, it may slow down performance. To specify the number of preview images you want in your preview pane, as well as their frame rate, select *Options* > *General* from the *Tools* menu.

  Tip: When the preview pane is closed, it uses no resources and improves therefore the computer's performance.

Licensing

When you purchase NetEVS, you also purchase a certain number of licenses for device channels. Device channels are typically cameras but could also be dedicated input/output boxes.

At first, when you have installed the various NetEVS components, configured the system, and added recording servers and cameras through the Management Client, the surveillance system runs on temporary licenses which need to be activated before a certain period ends. This is the so-called grace day period.

When the new surveillance system is working, we recommend that you activate your licenses before you make the final adjustments. The reason is that you must activate your licenses before the grace day period expires, since all recording servers and cameras for which no licenses have been activated will not be able to send data to the surveillance system if the grace day period is expired.

- ### Where Can I See How Many Grace Days Are Left?

  You can see how many grace days are left before you will have to activate your license when you expand *Basics* in the Management Client's navigation pane, and select *License Information*. Here you can also see how many licenses you have purchased and used, or if you need to get more licenses so all added cameras can deliver data to NetEVS.

  When you add a new camera for which you have a license, you are granted a new full grace day period for the camera in question from the date you added the camera. Therefore the end date of the grace day period displayed on the *License information* page is for the first added but not activated camera.

- ### Which Devices Require a License?

  You need licenses for the number of device channels—typically cameras but it could also be dedicated input/out boxes—you want to run on the NetEVS system. One device channel license enables you to run one camera or one dedicated input/output box. You can use and define an unlimited number of recording servers, microphones, speakers, inputs and outputs.

  You can always get more licenses as your surveillance system grows. See Getting Additional Licenses for more information.

- ### Replacing Cameras

  You can replace a camera licensed in the NetEVS system with a new camera, and have the new camera activated and licensed instead.

  The total number of purchased device channels corresponds to the total number of cameras that are able to run on the surveillance system simultaneously. If you remove a camera from a recording server, you also free a license.

  If you replace a camera with a similar camera (manufacturer, brand, and model), and give the new camera the same IP address as the old one, you will maintain full access to all the camera's databases. In this case, you simply move the network cable from the old camera to the new one without changing any settings in the Management Client, and then activate the license.

  If replacing a camera with a different model, you must use the Management Client to remove the old camera from the recording server in question. When removing a camera this way, you will delete the camera's media database, and you will not be able to access any archived databases for the camera.

  Note: You can replace a maximum of 20% of the total number of cameras per quarter of a year.

You get an excellent overview of the licenses in your NetEVS system if you expand *Basics* in the Management Client's navigation pane, and then select *License Information*. This will bring up the *License Information* page, on which you can see:

- Your software license code
- The total number of available device channels (typically cameras but it could also be dedicated input/output boxes) you are licensed to run
- How many licenses you have used, both the number of activated licenses and the number of temporary (not activated) licenses
- Whether you need to get additional licenses in order to have enough licenses for all of your cameras

License Information

Type	Total Licenses	Activated Licenses	Temporary Licenses	Expired Licenses	Missing Licenses
Recording Server	Unlimited	1	N/A	N/A	0
Device Channel	255	0	25	0	0
Camera	255	0	25	0	0
Microphone	Unlimited	0	0	0	0
Speaker	Unlimited	0	0	0	0
Input	Unlimited	0	0	0	0
Output	Unlimited	0	0	0	0

The first hardware grace expires 02-09-2008

Example only; numbers and dates may be different on your system

Any expiration dates listed on the page are in the Management Server's local time. Since you are not necessarily located in the same time zone as the Management Server, the Management Server's current local time is displayed in the bottom right corner of the page.

You can activate licenses offline by expanding *Basics* in the navigation pane and right-clicking *License Information*.

Note: The cameras (or dedicated input/output boxes) for which you do not have a license will not send data to the surveillance system. Cameras added after all available licenses are used are unavailable. Cameras without licenses will be identified by an exclamation mark symbol when listed in the Management Client's overview pane.

Tip: In the short period until you have obtained additional licenses, you can disable some less important cameras to allow some of the new cameras to run instead. Note, however, that you can replace a maximum of 20% of the total number of cameras a per quarter of a year. See Managing Hardware for more information.

License Activation

- ### Activate Licenses Offline

1. In the Management Client's navigation pane, expand *Basics*, right-click *License Information*, and select *Activate License Offline > Export License For Activation* to export a file with your currently added recording servers and cameras.

2. Specify a file name and a location for the license request (.lrq) file.

3. Send the license request file by e-mail to support@onssi.com. Your licenses will be verified. Your license request file will then be activated, and an updated license file will be sent back to you by e-mail.

How long will this process take? You will typically receive the updated license file in less than 24 hours. However, during busy periods, or during weekends or public holidays, the process may take 48 hours or more.

4. When you have received the updated license file (.lic), save it at a location accessible from the Management Client.

5. In the Management Client's navigation pane, expand Basics, right-click License Information, select Activate License Offline > Import Activated License, and select the .lic file to import it.

6. Click Finish to end the activation process.

Note: You cannot activate more licenses than you have purchased. To view your total number of licenses, expand *Basics* in the Management Client's navigation pane, and select *License Information*. If you have

added more cameras than you have licenses for, you must get additional licenses before you can activate them.

- **Activating Licenses after the Grace Day Period**

  Note: If the grace day period is exceeded before activation, all cameras which are not activated within the given period will become unavailable, and will not be able to send data to the surveillance system.

  If you exceed the grace day period before you activate a license, the license is not lost. You can activate the license as usual.

  Configuration, added cameras, defined recording servers, and other settings will not be removed from the Management Client if a license is activated too late.

Additional Licenses

What if you want to add—or if you already have added—more device channels (cameras or dedicated input/output boxes) than you currently have licenses for? In that case, you must buy additional licenses before the cameras will be able to send data to your NetEVS system.

To get additional licenses for your NetEVS system, contact your NetEVS vendor.

When you have received an updated license file (.lic) with the new licenses, you can activate your licenses. See Activating Licenses for more information.

Tip: In the short period until you get the additional licenses, you can disable some less important cameras to allow some of the new cameras to run instead. Note, however, that you can replace a maximum of 20% of the total number of cameras per quarter of a year. To disable or enable a camera, expand *Recording Servers* in Management Client's navigation pane, then select the required recording server, right-click the required camera, and select *Enable*.

Local IP Address Ranges

When a client, such as Ocularis Client/Ocularis Client Lite, connects to a surveillance system, an amount of initial data communication, including the exchange of contact addresses goes on in the background. This happens automatically, and is completely transparent to users.

Access clients may connect from the local network as well as from the internet, and in each case the surveillance system should be able to provide suitable addresses so the clients can get access to live and recorded video from the recording servers:

- When access clients connect locally, the surveillance system should reply with local addresses and port numbers.

- When access clients connect from the internet, the surveillance system should reply with the recording servers' public addresses, i.e. the address of the firewall or NAT (Network Address Translation) router, and often also a different port number (which is then forwarded to recording servers).

The surveillance system must therefore be able to determine whether an access client belongs on a local IP range or on the internet. For this purpose, you are able to define a list of IP ranges which the surveillance system should recognize as coming from a local network:

- **Defining Local IP Address Ranges**

  1. In the Management Client's menu bar, select *Tools* > *Options*. This will open the *Options* dialog.

Tip: You can also access the *Options* dialog from the *Network* tab; this can be handy if you are also configuring the public IP address of a recording server.

2. In the *Options* dialog, select the *Network* tab.
3. On the *Network* tab, click the *Add* button.
4. In the *Range Start* column, specify the first IP address in the required range. Then specify the last IP address in the range in the *Range End* column.

   Tip: If required, a range may include only one IP address (example: 192.168.10.1-192.168.10.1).
5. If more ranges are required, repeat steps 3-4.
6. Click *OK*.

- **Editing Local IP Address Ranges**
  1. In the Management Client's menu bar, select *Tools* > *Options*. This will open the *Options* dialog.
  2. In the *Options* dialog, select the *Network* tab.
  3. Overwrite the existing information in the *Range Start* and *Range End* columns as required.
  4. Click *OK*.

- **Removing Local IP Address Ranges**
  1. In the Management Client's menu bar, select *Tools* > *Options*. This will open the *Options* dialog.
  2. In the *Options* dialog, select the *Network* tab.
  3. Select the unwanted IP address range.
  4. Click the *Remove* button.
  5. Click *OK*.

Logging

In the Management Client, *NetEVS-Manager*, you are able to view 5 different logs related to the Management Server:

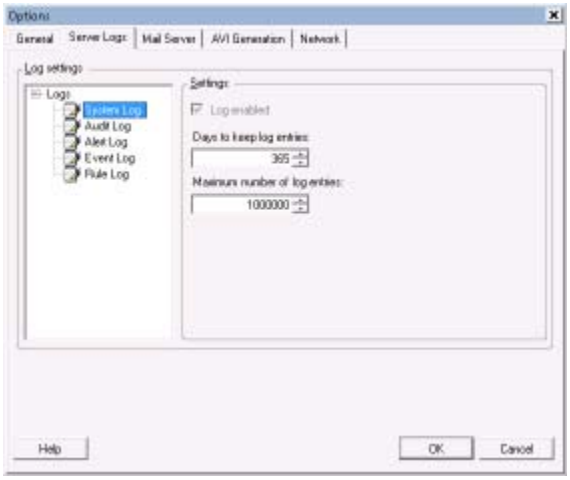
- The System Log records system-related information
- The Audit Log records remote user activity
- The Alert Log records alerts triggered by rules
- The Event Log records event-related information
- The Rule Log records rules in which the *Make new <log entry>* action has been specified

NetEVS has a number of default settings related to its 5 different logs. For information about how to verify or change these settings, see Logging Settings.

You are able to export logs, and save the exported logs as tab delimited text (.txt) files at a location of your choice; see Exporting Logs for more information.
NetEVS has a number of default settings related to its 5 different Management Server logs: the *System Log*, the *Event Log*, the *Audit Log*, the *Rule Log*, and the *Alert Log*.

To verify or change these settings, do the following:

1. Go to the NetEVS-Manager menu bar, and select *Tools* > *Options...*
2. In the *Options* window, select the *General* tab. One of the tab's settings applies for all types of logs:
    - ***Number of log rows to retrieve per page*:** Lets you specify the number of log rows you want to view on a single log page. If a log contains more than the specified number of rows, you will be able view the remaining rows on subsequent log pages.
3. Go to the *Options* window's *Management Server Logs* tab:



In the tab's left box, select the required log. The selected log's settings are displayed in the tab's right box:

- ***Log enabled*:** Lets you enable/disable the selected log. By default, all logs are enabled.

  Note: The *System Log* and *Audit Log* cannot be disabled by clearing the box.

- ***Days to keep log entries*:** Lets you specify how many days the log's information should be kept for. Default is 365 days.

  Note: Excess log content will be deleted if the log reaches its maximum allowed size (see *Maximum number of entries*) before the specified number of days is reached.

- ***Maximum number of entries*:** Lets you specify the maximum size of the log. Default is one million entries.

  Note: Excess log content will be deleted if it reaches its maximum allowed age (see *Days to keep log entries*) before the specified number of entries is reached.

For the *Audit Log*, you will furthermore see:

- ***Enable user access logging*:** Lets you include detailed information about specific user actions in the audit log, e.g. about users' viewing of live video (and associated audio), PTZ actions, activation of output and events, export, playback of video and audio, use of playback features, any denied access to features, etc.

- ***Playback sequence logging length*:** Lets you specify the number of seconds to pass for viewed images to be considered to be within the same sequence. Specifying a high number of seconds may help limit the number of viewed sequences logged, and thus reduce the size of the audit log.

- ***Records seen before logging*:** Lets you specify the number of records to be viewed before logging the sequence.

4. Click *OK*.

Logs

The System Log records system-related information.

- ### Viewing the System Log

  To view the System Log, expand the *Management Server Logs* item in the Management Client's navigation pane, then select *System Log*.

- ### System Log Content

  Each row in the System Log represents a log entry. Each row contains the following information:

  - ***Level*:** Displays an icon indicating the level of the log entry:

    indicates *info*

    indicates *error*

    indicates *warning*

  - ***UTC Time*:** Timestamp in coordinated universal time (UTC), an international high-precision time standard.

  - ***Local Time*:** Timestamp in the local time of the NetEVS Management Server.

  - ***Description*:** Description of the logged incident.

  - ***ID*:** Identification number of the logged incident.

  - ***Source Type*:** Type of equipment on which the logged incident occurred, for example *Management Server* or *Device*.

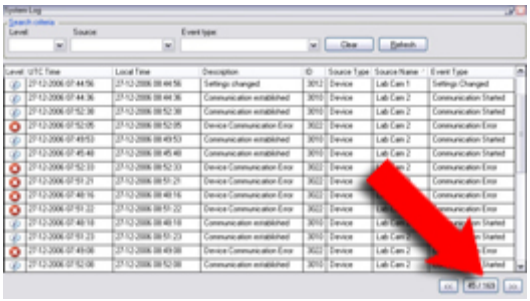
  - ***Source Name*:** Name of the Management Server, device, etc. on which the logged incident occurred.

  - ***Event Type*:** Type of event represented by the logged incident.

    Tip: For more information about event types, see also the list of events in the events overview.

- ### Navigating the System Log

  If the System Log contains more than one page of information, you are able to navigate between the log's pages by clicking the buttons in the bottom right corner of the log pane:

  << lets you move one step towards the log page containing the most recent log entries.

  1 / 171 indicates which page you are currently viewing (e.g. page 1 of 171). By clicking the button, you are able specify a page number and go straight to that page.

  >> lets you move one step towards the log page containing the oldest log entries.

- ### Searching the System Log

  To search the System Log, use the *Search criteria* box in the top part of the log pane:

  1. Specify your search criteria by selecting the required logging level, source, etc. from the lists.

     Tip: You can combine selections, or make no selection in certain lists, as required. The more search criteria you combine, the less search results you will typically get.

  2. Click the *Refresh* button to make the log page reflect your search criteria.

     Tip: To clear your search criteria, and return to viewing all of the log's content, click the *Clear* button.

The Audit Log records remote user activity.

- ### Viewing the Audit Log

  To view the Audit Log, expand the *Server Logs* item in the Management Client's navigation pane, then select *Audit Log*.

- ### Audit Log Content

  Each row in the Audit Log represents a log entry. Each row contains the following information:

  - ***Level*:** Displays an icon indicating the level of the log entry:

    indicates *info*

    indicates *error*

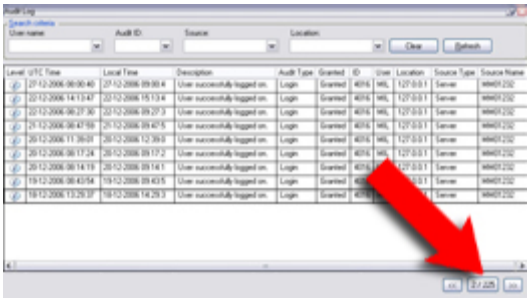
    indicates *warning*

  - ***UTC Time*:** Timestamp in coordinated universal time (UTC), an international high-precision time standard.

- ***Local Time*:** Timestamp in the local time of the NetEVS server.
- ***Description*:** Description of the logged incident.
- ***Audit Type*:** Type of logged incident.
- ***Granted*:** Information about whether the remote user action was allowed (granted) or not.
- ***ID*:** Identification number of the logged incident.
- ***User*:** User name of the remote user causing the logged incident.
- ***Location*:** IP address or host name of the computer from which the remote user caused the logged incident.
- ***Source Type*:** Type of equipment on which the logged incident occurred. Since remote user access is handled by the NetEVS Management Server, source type will typically be *Server*.
- ***Source Name*:** Name of the Management Server on which the logged incident occurred.

Navigating the Audit Log

If the Audit Log contains more than one page of information, you are able to navigate between the log's pages by clicking the buttons in the bottom right corner of the log pane:



lets you move one step towards the log page containing the most recent log entries.

indicates which page you are currently viewing (e.g. page 1 of 171). By clicking the button, you are able specify a page number and go straight to that page.

lets you move one step towards the log page containing the oldest log entries.

Searching the Audit Log

To search the Audit Log, use the *Search criteria* box in the top part of the log pane:

1. Specify your search criteria by selecting the required user name, location, etc. from the lists.

   Tip: You can combine selections, or make no selection in certain lists, as required. The more search criteria you combine, the less search results you will typically get.

2. Click the *Refresh* button to make the log page reflect your search criteria.

Tip: To clear your search criteria, and return to viewing all of the log's content, click the *Clear* button.

The Alert Log records rule-triggered alerts.

- ## Viewing the Alert Log

  To view the Alert Log, expand the *Management Server Logs* item in the Management Client's navigation pane, then select *Alert Log*.

- ## Alert Log Content

  Each row in the Alert Log represents a log entry. Each row contains the following information:

  - ***Level*:** Displays an icon indicating the level of the log entry:

    indicates *info*, the only level available in the Alert Log

  - ***UTC Time*:** Timestamp in coordinated universal time (UTC), an international high-precision time standard.

  - ***Local Time*:** Timestamp in the local time of the NetEVS Management Server.

  - ***Alert Type*:** Type of logged incident.

  - ***Description*:** Description of the logged incident (if a description is available).

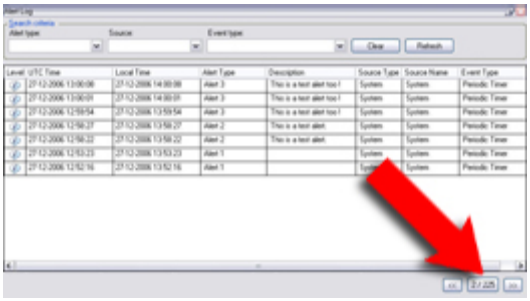
  - ***Source Type*:** Type of equipment on which the logged incident occurred. Since alerts are administrator-defined and relate to incidents on the NetEVS system, source type will normally be *System*.

  - ***Source Name*:** Name of the source on which the logged incident occurred, normally *System*.

  - ***Event Type*:** Type of event represented by the logged incident.

- ## Navigating the Alert Log

  If the Alert Log contains more than one page of information, you are able to navigate between the log's pages by clicking the buttons in the bottom right corner of the log pane:

  lets you move one step towards the log page containing the most recent log entries.

  indicates which page you are currently viewing (e.g. page 1 of 171). By clicking the button, you are able specify a page number and go straight to that page.

lets you move one step towards the log page containing the oldest log entries.

- ### Searching the Alert Log

  To search the Alert Log, use the *Search criteria* box in the top part of the log pane:

  1. Specify your search criteria by selecting the required alert type, source, etc. from the lists.

     Tip: You can combine selections, or make no selection in certain lists, as required. The more search criteria you combine, the less search results you will typically get.

  2. Click the *Refresh* button to make the log page reflect your search criteria.

     Tip: To clear your search criteria, and return to viewing all of the log's content, click the *Clear* button.

The Event Log records event-related information.

- ### Viewing the Event Log

  To view the Event Log, expand the *Management Server Logs* item in the Management Client's navigation pane, then select *Event Log*.

- ### Event Log Content

  Each row in the Event Log represents a log entry. Each row contains the following information:

  - ***Level*:** Displays an icon indicating the level of the log entry:

    indicates *info*

    indicates *error*

    indicates *warning*

  - ***UTC Time*:** Timestamp in coordinated universal time (UTC), an international high-precision time standard.

  - ***Local Time*:** Timestamp in the local time of the NetEVS Management Server.

  - ***Description*:** Description of the logged incident.

  - ***ID*:** Identification number of the logged incident.

  - ***Event Type*:** Type of event represented by the logged incident.

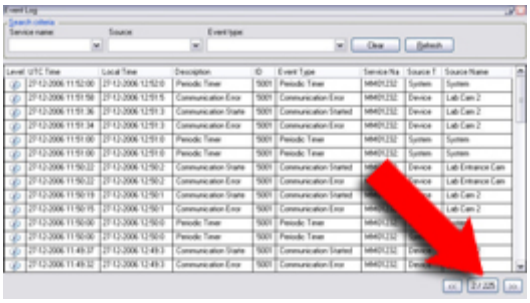
  - ***Service Name*:** Name of service on which the logged incident occurred.

  - ***Source Type*:** Type of equipment on which the logged incident occurred, for example *Management Server* or *Device*.

  - ***Source Name*:** Name of the Management Server, device, etc. on which the logged incident occurred.

- ### Navigating the Event Log

  If the Event Log contains more than one page of information, you are able to navigate between the log's pages by clicking the buttons in the bottom right corner of the log pane:



lets you move one step towards the log page containing the most recent log entries.

indicates which page you are currently viewing (e.g. page 1 of 171). By clicking the button, you are able specify a page number and go straight to that page.

lets you move one step towards the log page containing the oldest log entries.

- ### Searching the Event Log

  To search the Event Log, use the *Search criteria* box in the top part of the log pane:

  1. Specify your search criteria by selecting the required service name, source, etc. from the lists.

     Tip: You can combine selections, or make no selection in certain lists, as required. The more search criteria you combine, the less search results you will typically get.

  2. Click the *Refresh* button to make the log page reflect your search criteria.

     Tip: To clear your search criteria, and return to viewing all of the log's content, click the *Clear* button.

The Rule Log records rules in which the *Make new <log entry>* action has been specified.

- ### Viewing the Rule Log

  To view the Rule Log, expand the *Management Server Logs* item in the Management Client's navigation pane, then select *Rule Log*.

- ### Rule Log Content

  Each row in the Rule Log represents a log entry. Each row contains the following information:

  - ***Level*:** Displays an icon indicating the level of the log entry:

    indicates *info*

    indicates *error*

    indicates *warning*

  - ***UTC Time*:** Timestamp in coordinated universal time (UTC), an international high-precision time standard.

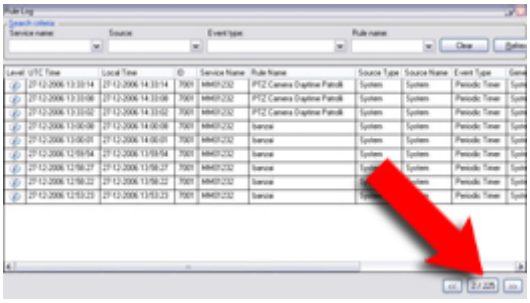
  - ***Local Time*:** Timestamp in the local time of the NetEVS Management Server.

  - ***ID*:** Identification number of the logged incident.

- ***Service Name*:** Name of service on which the logged incident occurred.
- ***Rule Name*:** Name of the rule triggering the log entry.
- ***Source Type*:** Type of equipment on which the logged incident occurred. Since the log entries are administrator-defined and relate to incidents on the NetEVS system, source type will normally be *System*.
- ***Source Name*:** Name of the source on which the logged incident occurred, normally *System*.
- ***Event Type*:** Type of event represented by the logged incident.
- ***Generator Type*:** Type of equipment on which the logged incident was generated. Since the log entries are administrator-defined and relate to incidents on the NetEVS system, generator type will normally be *System*.
- ***Generator Name*:** Name (if any) of the equipment on which the logged incident was generated.
- ***Description*:** Description of the logged incident (if a description is available).

Navigating the Rule Log

If the Rule Log contains more than one page of information, you are able to navigate between the log's pages by clicking the buttons in the bottom right corner of the log pane:



lets you move one step towards the log page containing the most recent log entries.

indicates which page you are currently viewing (e.g. page 1 of 171). By clicking the button, you are able specify a page number and go straight to that page.

lets you move one step towards the log page containing the oldest log entries.

Searching the Rule Log

To search the Rule Log, use the *Search criteria* box in the top part of the log pane:

1. Specify your search criteria by selecting the required rule name, etc. from the lists.

   Tip: You can combine selections, or make no selection in certain lists, as required. The more search criteria you combine, the less search results you will typically get.

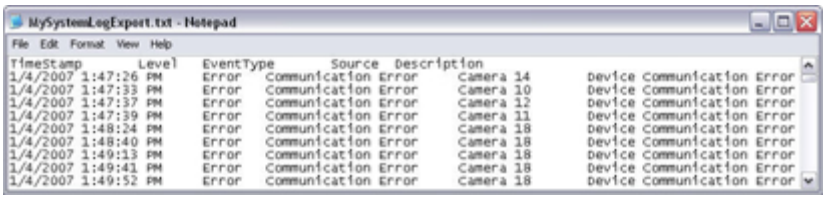
2. Click the *Refresh* button to make the log page reflect your search criteria.

Tip: To clear your search criteria, and return to viewing all of the log's content, click the *Clear* button.

Export

You are able to export logs, and save the exported logs as tab delimited text (.txt) files at a location of your choice.

Example of an exported log .txt file viewed in Notepad:


MySystemLogExport.txt - Notepad
File Edit Format View Help
TimeStamp Level EventType Source Description
1/4/2007 1:47:26 PM Error Communication Error Camera 14 Device Communication Error
1/4/2007 1:47:33 PM Error Communication Error Camera 10 Device Communication Error
1/4/2007 1:47:37 PM Error Communication Error Camera 12 Device Communication Error
1/4/2007 1:47:39 PM Error Communication Error Camera 11 Device Communication Error
1/4/2007 1:48:24 PM Error Communication Error Camera 18 Device Communication Error
1/4/2007 1:48:40 PM Error Communication Error Camera 18 Device Communication Error
1/4/2007 1:49:13 PM Error Communication Error Camera 18 Device Communication Error
1/4/2007 1:49:41 PM Error Communication Error Camera 18 Device Communication Error
1/4/2007 1:49:52 PM Error Communication Error Camera 18 Device Communication Error

You are able to target the exported log content by specifying which log, which log elements, and which time range to include in the export. For example, you are able to specify that only the System Log's error-related log messages from between January 2nd 2007 15:00:00 and January 4th 2007 14:59:59 should be included in your export.

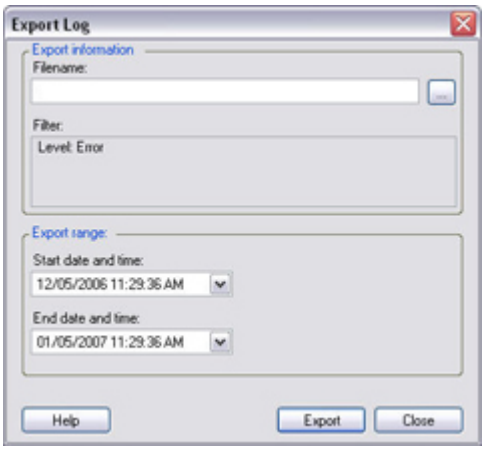
To export a log, do the following:

1. Expand the *Management Server Logs* item in the Management Client's navigation pane, and select the required log.

2. If you want to target the exported log's content, select the required criteria in the *Search criteria* section above the log. For example, you may select that your export should only contain log messages at a particular level, such as errors or warnings.

   Remember to click the *Refresh* button to make the log page reflect your selected criteria.

3. In the Management Client's menu bar, select *Action* > *Export Log...* This will open the *Export Log* window:

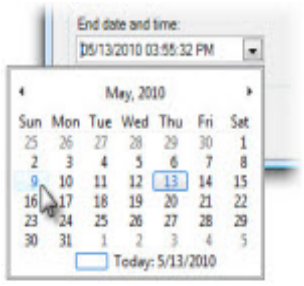
4. In the *Export Log* window's *Filename* field, specify a name for the exported log file.

   By default, exported log files will be saved in your *My Documents* folder. However, you are able to

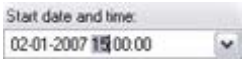
specify a different location by clicking the browse button next to the field.

5. Any criteria you have selected in order to target the content of the exported log will be listed in the *Filters* field. The field is non-editable; if you find that you need to change your criteria, close the window, and repeat steps 2-4.

6. Specify the time period you want the export to cover. You do this by specifying the required boundaries in the *Start date and time* and *End date and time* fields respectively. By clicking the arrow, you are able to select the required date from a calendar:



To specify an exact time, overwrite the required time elements (hours:minutes:seconds) with the required values. In the following example, the hours element is being overwritten:



Tip: When you have selected time elements in order to overwrite them, you are also able to use your keyboard's UP ARROW and DOWN ARROW keys to increase/reduce the numbers in increments of one unit.

7. Click the *Export* button to export the required log content to the required location.

NetMatrix

With NetMatrix—one integrated solution for distributed viewing of video and included with NetEVS—you can send video from any camera on a network operating NetEVS to NetMatrix recipients.

A NetMatrix recipient is basically a computer capable of displaying NetMatrix-triggered video. There are 2 kinds of NetMatrix recipients: computers running the dedicated NetMatrix Monitor application and computers running Ocularis Client Lite. Ocularis Client users need not use NetMatrix to manually push video to other users as this functionality is inherent in the Ocularis Base Server. See the Ocularis Administrator documentation for more information

To see a list of NetMatrix recipients configured in the Management Client, expand the *Client* node in the Management Client's navigation pane, then select *NetMatrix.* A list of NetMatrix configurations is displayed in the Management Client's properties pane.

Note: Each NetMatrix recipient, regardless whether it is a computer with the NetMatrix Monitor or Ocularis Client Lite, must be configured to receive NetMatrix-triggered video.

- #### Adding NetMatrix Recipients

  To add an existing NetMatrix recipient—i.e. an existing NetMatrix Monitor or Ocularis Client Lite installation—through the Management Client, do the following:

  1. In the Management Client's navigation pane, expand the *Client* node, then select *NetMatrix.*

2. In the Management Client's overview pane, right-click *NetMatrix Configurations* and select *Add New Matrix...* This opens the *Add New NetMatrix* dialog.
3. In the *Name* field, enter a descriptive name for the NetMatrix recipient.
4. In the *Description* field, enter a description of the NetMatrix recipient.
5. In the *Address* field enter the IP address or the host name of the required NetMatrix recipient
6. In the *Port* field enter the port number used by the NetMatrix recipient installation.
7. In the *Password* field enter the NetMatrix recipient's password. Remember that passwords are case sensitive, i.e. there is a difference between typing *amanda* and *Amanda*.
8. In the *Type* field select the type of NetMatrix recipient you are adding—a NetMatrix Monitor or an Ocularis Client Lite recipient.

   Note: NetEVS does not verify that the specified port number or password is correct or that the specified port number, password, or type corresponds with the actual NetMatrix recipient. Therefore, make sure that you enter the information correctly.
9. Click *OK* to save the settings.

You are now able to use the NetMatrix recipient in rules. See Defining Rules Sending Images to NetMatrix Recipients for more information about including NetMatrix recipients in rules.

- ### Editing NetMatrix Recipients

1. In the Management Client's navigation pane, expand the *Client* node, then select *NetMatrix.*
2. Select a NetMatrix recipient from the list, and edit the NetMatrix configuration displayed in the properties pane.
3. Click the save button in the toolbar.

- ### Deleting NetMatrix Recipients

Note: If you delete a NetMatrix recipient, any rule that includes the NetMatrix recipient will stop working.

1. In the Management Client's navigation pane, expand the *Client* node, then select *NetMatrix.*
2. Right-click the required NetMatrix recipient in the list, and select *Delete Matrix.*
3. Click Yes to confirm that you want to delete the NetMatrix recipient.

- ### Advanced Tips for Ocularis Client Lite NetMatrix Recipients

If the NetMatrix recipient is an Ocularis Client Lite user, you can send the same video to NetMatrix positions in several of Ocularis Client Lite's views, provided the views' NetMatrix positions share the same port number and password. Do the following:

1. In Ocularis Client Lite, create the required views, and NetMatrix positions that share the same port number and password.
2. In the NetEVS-Manager, specify Ocularis Client Lite as a NetMatrix recipient.

3. Include the NetMatrix recipient in a rule.

To be able to send video to NetMatrix recipients you must—after you have configured a NetMatrix recipient—include the NetMatrix recipient in a rule that triggers the video transmission to the requested NetMatrix recipient.

Do the following:

1. Start the *Rule Wizard* and in step 1 select a rule type and, if necessary, a condition in step 2. See Managing Rules for more information.
2. In *Rule Wizard*'s step 3 (*Step 3: Actions*) select the *Set NetMatrix to view <devices>* action.
3. Click the *NetMatrix* link in the initial rule description.
4. In the *Select NetMatrix Configuration* dialog, select the required NetMatrix recipient, and click *OK*.
5. Click the *devices* link in the initial rule description, and select from which cameras you would like to send video to the NetMatrix recipient, then click *OK* to confirm your selection.
6. Click *Finish* if the rule is complete or define—if required—additional actions and/or a stop action. See Managing Rules for more information.

Microphones

On many devices you are able to attach external microphones; some devices even have built-in microphones.

Devices' microphones are automatically detected when you add the devices to your NetEVS system through the Management Client's Hardware Detection Wizard, regardless of which of the wizard's detection options you use.

Microphones do not require separate licenses; you can use as many microphones as required on your system.

You can use microphones completely independently of cameras.

Who is able to listen to audio recorded by microphones? Users of Ocularis Client/Ocularis Client Lite can—provided microphones are available, and the users have the rights to use them—listen to audio from microphones. Roles determine users' right to listen to microphones with Ocularis Client Lite. The Ocularis Administrator application configures microphone privileges for users of the Ocularis Client. You cannot listen to microphones from the Management Client.

Tip: NetEVS contains a default rule which ensures that audio feeds from all connected microphones and speakers are automatically fed to the NetEVS system. Like other rules, the default rule can be deactivated and/or modified as required.

Read more about microphone management in Managing Microphones.

You have two entry points for managing microphones:

- In the Management Client's navigation pane, expand *Devices*, select *Microphones*, expand the required device group, and select the required microphone. If no device groups are available, you must first group your microphones: See Using Device Groups for information about creating groups as well as adding microphones to your groups.

- In the Management Client's navigation pane, expand *Servers* and select *Recording Servers*, then in the overview pane expand the required recording server, expand the required device and select the required microphone.

Note: Check the NetEVS release notes to verify that microphones are supported for the devices and firmware used.

- ### Enabling Microphones

  When microphones are detected with the Hardware Detection Wizard, they are by default disabled. You can enable microphones when needed. If a device has several microphones you can enable one, some, or all of them as required.

  1. In the navigation pane, expand *Servers* and select *Recording Servers*.
  2. In the overview pane, expand the relevant recording server, and find the device on which the microphone is placed.
  3. Right-click the required microphone, and select *Enabled*.

  Note: On some devices, a microphone can also be enabled/disabled on the device itself, typically through the device's own configuration web page. If a microphone does not work after enabling it in the Management Client, you should thus verify whether the problem may be due to the microphone being disabled on the device itself.

- ### Configuring Individual Microphones

  You configure individual microphones by selecting the required microphone in the list, then specifying the microphone's required settings on the tabs in the *Properties* pane:

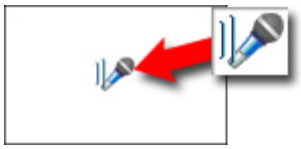
  - The *Info* tab for managing the selected microphone's name, etc.
  - The *Settings* tab for managing the selected microphone's general settings.
  - The *Record* tab for managing the selected microphone's recording and database storage settings.
  - The *Archiving* tab for managing the selected microphone's archiving settings. Archiving is the automatic transfer of recordings from the microphone's default database to another location. This way, the amount of recordings you are able to store will not be limited by the size of the microphone's default database. Archiving also makes it possible to back up your recordings on backup media of your choice.
  - The *Events* tab for managing hardware configurable events.

- ### Viewing the Current State of a Microphone

  When you have selected a microphone in the Management Client, information about the current status of the selected microphone is presented in the preview pane.

  When a microphone is not active, it is shown as:

When the microphone is active, it is shown as:



- ## Microphone List's Status Icons

The following icons are used to indicate the status of each microphone:

***Microphone is enabled*:** An enabled microphone can communicate with the recording server, and can if required be started/stopped automatically through a rule.

Microphone is recording

Microphone is communicating with NetEVS.

***Microphone is temporarily stopped or has no feed*:** Often shown when the microphone is communicating with NetEVS while the microphone is being disabled or enabled. Also shown if the *Default Start Audio Feed Rule* is not active; see Managing Rules.

***Microphone is disabled*:** A disabled microphone cannot be started automatically through a rule and will not be able to communicate with the recording server.

Microphone requires attention

Status unknown

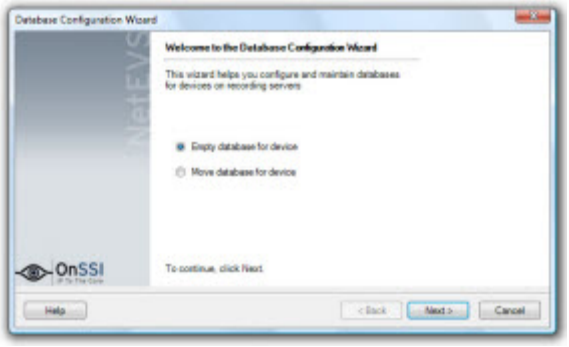
Note that some icons may be combined, as in this example where *Microphone is enabled* is combined with *Microphone is recording* (since a recording microphone is also an enabled microphone).

Database Management

Manage the databases of individual cameras, microphones and speakers through the *Database Configuration Wizard*. The wizard conveniently guides you through the processes of emptying or moving databases.

Note: Recordings will only be saved in the databases when recording is enabled and recording-related rule criteria are met.

To manage a database, select the required camera, microphone or speaker in the Management Client's overview pane, then select the *Record* tab in the properties pane. On the *Record* tab, click the *Database Wizard...* button to open the *Database Configuration Wizard*. When you open the *Database Configuration Wizard* this way, it lets you select between two options: empty or move the database.


Database Configuration Wizard
Welcome to the Database Configuration Wizard
This wizard helps you configure and maintain databases for devices on recording servers
Empty database for device
Move database for device
To continue, click Next
OnSSI
Help
< Back
Next >
Cancel

Database Configuration Wizard, displaying database management options

Tip: The *Database Configuration Wizard* lets you select different options if opened while working with a recording server; see *Recording Server Database Management*.

- ### Empty Database for Device

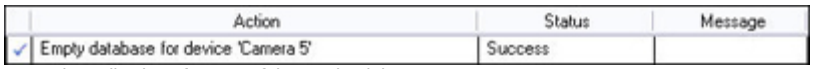
  To empty the database of the selected camera, microphone or speaker, do the following in the *Database Configuration Wizard*:

  1. On the wizard's first step, select *Empty databases for device*, and click *Next*.
  2. On the second step of the wizard, select the check boxes next to the databases you want to empty:

     Then click *Next*.
  3. In order to prevent accidental data deletion, you will be asked to confirm that you want to permanently delete all media data for the device in question.

     If you are sure, click *Yes*.
  4. The database will be emptied. A bar displays how the emptying job progresses:

When the emptying job is complete, you will be informed whether the job was successful or whether it failed. If the job failed, you will be able view a status message indicating what caused the failure.



Example: Indication of successful emptying job

Example: Indication of failed emptying job, with link to status message

5. Click *Finish*.

- ## Move Database for Device

If several storage areas exist on the recording server on which the selected camera, microphone or speaker belongs, you are able to move the database to another storage area. Moving the database will not affect its content, and you will be still able to record during the move.

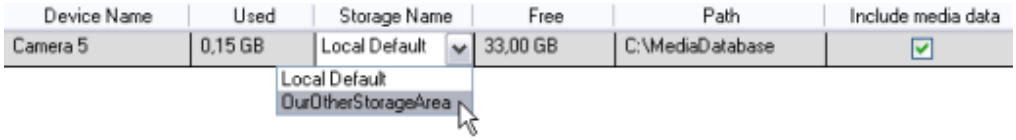
IMPORTANT: Before moving a database, make sure sufficient free space is available at the new storage area. This is especially important if moving a large database, since the moving process may take time, and the database may become even larger if the database must store new recordings during that time. As a rule of thumb, sufficient free space means *at least* the size of the database (allowing for the fact that it may grow) plus 500 MB. If sufficient free space is not available at the new storage drive, you risk data being deleted. The wizard described in the following helps you determine database and storage area sizes.

Tip: A recording server's storage areas can be managed through the *Database Configuration Wizard* when the wizard is opened while working with a recording server; see Recording Server Database Management.

To move the database of the selected camera, microphone or speaker, do the following in the *Database Configuration Wizard*:

1. On the wizard's first step, select *Move database for device*, and click *Next*.

2. On the second step of the wizard, select the required storage area:



Selecting required storage area; note that the *Include media data* box is selected by default

Make absolutely sure that the new storage area has enough free space to accommodate the database: Compare the *Used* column (which displays the current size of the database) with the *Free* column (which displays the current amount of free space in the destination storage area). See also the IMPORTANT note in the previous.

Then, make sure the required database is selected in the *Include media data* column (if check box is not selected, only the database structure, not its content, will be moved), and click *Next*.

3. The database will be moved. A bar displays how the beginning of the moving job progresses:

You will be informed whether the job has begun successfully or whether it has failed. If the job failed, you will be able to view a status message indicating what caused the failure.

	Action	Status	Message
✓	Move database for device 'Camera 5'	Success	

Example: Indication of successful beginning of a moving job

	Action	Status	Message
⚠	Move database for device 'Camera 5'	Fail	Messages...

Example: Indication of failed moving job, with link to status message

Note that the status *Success* only indicates that the moving job has begun successfully, not that the job is complete. Moving of large databases may take considerable time.

Tip: You can follow the further progress of the moving job by looking at the *Database Configuration* information on the Record tab for the device in question.

4. Click *Finish*.

Tip: Protect your databases! Databases may become corrupted if the recording server is shut down abruptly, for example due to a power failure or similar. See Protecting Databases from Corruption for useful information about how to avoid corrupt databases.

Info

The *Info* tab lets you view and edit basic information about a selected microphone. The *Info* tab contains the following fields:

- ***Name*:** Name of the microphone. The name will be used whenever the microphone is listed in NetEVS and access clients. A name is not compulsory, but highly recommended. The name does not have to be unique.

  To change the name, overwrite the existing name and click the *Save* button in the Management Client's toolbar.

  Tip: If you change the name, it will be updated throughout NetEVS. This means that if the name is used in, for example, a rule, the name will automatically change in the rule as well.

- ***Description*:** Description of the microphone. A description is not compulsory. The description will appear in a number of listings within NetEVS. For example, the description will appear when pausing the mouse pointer over the microphone's name in the Management Client's overview pane. To specify a description, type the description and click the *Save* button in the Management Client's toolbar.

- ***Hardware name*:** Name of the hardware with which the microphone is connected. The field is non-editable. However, the hardware name can be changed by clicking the *Go To* button next to the field. Clicking the *Go To* button will take you to the hardware information, where the name is editable.

- ***Unit number*:** Non-editable field, displaying the unit on which the microphone is attached on the hardware.

Settings

The *Settings* tab lets you verify or edit basic settings for a selected microphone, or for all microphones within a selected device group. However if the selected device group contains more than 400 microphones the *Settings* tab is unavailable for viewing and editing because changing settings for so many devices in one step takes too long time.

Note: Content of the *Settings* tab may vary depending on the types of microphones selected.

The content of the *Settings* tab is displayed in a table, in which the first column lists the available settings, and the second column lists the value of each setting.

You are typically able to change values; when you have changed a setting to a non-default value, the value will appear in **bold**. When a value must be within a certain range, for example between 0 and 100, the allowed range will be displayed in the information box below the settings table.

- ### Specifying Common Settings for All Microphones in a Device Group

  If using device groups (see Managing Microphones), you are able to quickly specify common settings for all microphones within a given device group:

  1. In the microphone list in the Management Client's overview pane, click the required device group.

     On the *Settings* tab, all settings *which are common to all of the device group's microphones* will be listed. Depending on the amount and type of microphones in the device group, the list may only contain a few settings. If the device group contains more than 400 microphones the *Settings* tab is unavailable for viewing and editing because changing settings for so many devices in one step takes too long time.

     You are now able to verify or change the common settings.

  2. If required, you are able to specify settings for the device group's individual microphone types as well. From the menu above the settings list, select the required type of microphone to verify or change the settings of the selected type of microphone.

  3. If you have made changes to the settings, save your changes by clicking the *Save* button in the Management Client's toolbar:

Recording

The *Record* tab lets you specify recording and storage settings for the selected microphone. Microphones' recording and storage settings are completely independent of cameras and speakers.

Note: Recordings from a microphone will only be saved in the microphone's database when recording is enabled and recording-related rule criteria are met.

- ### Enabling and Disabling Recording

  Recording is by default enabled.

  To enable/disable recording for the selected microphone, select/clear the *Record* tab's *Enable recording* check box.

  Note: Recording must be enabled for the microphone before you are able to record (i.e. save) audio from the microphone. A rule specifying that a microphone should record under particular circumstances will not work if recording is disabled for the microphone in question.

- ### Recording Settings

  Prebuffering is essentially the ability to save audio in the microphone's database before the initial boundaries of a recording.

  Use of prebuffering can be highly advantageous: It allows you to save audio from *before* the events or times used to start recordings.

How Does Prebuffering Work?

Prebuffering is possible since NetEVS continuously receives streams of audio from connected microphones (unless the transfer of audio from microphones has in some way been disabled). Storing audio from before the initial boundaries of a recording is therefore not a problem: audio passes through NetEVS anyway.

When prebuffering is enabled for a microphone, NetEVS continuously records audio from the microphone's stream and provisionally stores it in the database for a specified number of seconds before automatically deleting it—unless the provisionally stored audio turns out to be required for a recording, in which case it is automatically added to the recording.

The following example illustrates how prebuffered audio is added to a recording:

This is the stream received by NetEVS:

These are the initial boundaries of a recording, as defined, for example, by start and stop events:

However, a rule specifies that recording should start 5 seconds prior to the start event, so 5 seconds of prebuffered audio is added:

This is what is actually recorded:

Enabling and Disabling Prebuffering

Prebuffering is by default enabled; with a prebuffer size of 3 seconds. To enable/disable prebuffering, select/clear the *Enable prebuffering* check box. When enabling, remember to specify a prebuffer size.

Specifying Prebuffer Size

Select or type the required prebuffer size (in seconds) in the *Prebuffer size* box. Clicking the *Prebuffer size* box' up/down arrows will increase/reduce the value in increments of 1 second. The number of seconds you specify in the *Prebuffer size* box must be sufficiently large to accommodate your requirements.

Using Prebuffering in Rules

The use of prebuffering enables you to create rules specifying that recording should begin prior to the event or time triggering the rule.

- ### Maximum Storage Limits

  The *Record* tab's *Maximum storage limits* specify how long recordings are kept in the database for. Note that adjusting the *Maximum storage limits* has an impact on any archiving you may have set up. See About Archiving for more information.

  Tip: With archiving, you are able to store recordings beyond the maximum limits of the database.

  For the microphone's database, you are able to specify a maximum time limit (e.g. 1 day) as well as a maximum database size limit (e.g. 2 gigabytes). Whichever of the 2 limits is reached first will apply.

  - ### Specifying a Maximum Storage Time Limit

    To specify a maximum time limit, select or type the required values in the *Time period* boxes (*Days*, *Hours* and *Minutes*).

    Clicking the *Time period* boxes' up/down arrows will increase/reduce the value in increments of one day/hour/minute respectively.

  - ### Specifying a Maximum Storage Size Limit

    By default, the maximum size of a microphone's database is 5 GB. To specify a different maximum database size limit, select or type the required value (in gigabytes) in the *Size* box.

    Tip: The value in the *Size* box is shown with 2 decimals. By selecting the number before or after the separator, you are able to increase/reduce the numbers in increments of 1 unit. This way you are able to specify a very specific maximum database size, for example of 4.13 gigabytes.

IMPORTANT: In order to prevent operating system failures due to insufficient disk space, the oldest records in the database will automatically be deleted for all cameras, microphones and speakers recording on the disk in question when less than 500 MB of space is left on the disk containing the database, regardless of any time or size limits specified for the databases. This will help ensure that at least 500 MB of disk space will be available for operating system use, and by using archiving you are able to store recordings beyond the maximum limits of the databases.

- ## Database Configuration

The *Record* tab's *Database configuration* section displays information about the database used for the microphone:

- ### Database Configuration Section's Fields

The *Database Configuration* section contains the following fields:

- ***Database Name*:** Non-editable field, displaying the name of the database used for the microphone.
- ***Database Path*:** Non-editable field, displaying the path to the database used for the microphone.
- ***Used Space*:** Non-editable field, displaying the current size of the database for the microphone.

- ### Database Wizard

The *Database Configuration* section features a *Database Wizard...* button.

Clicking the *Database Wizard...* button will start the *Database Configuration Wizard*, with which you are able to quickly and conveniently empty or move the database for the microphone.

Archiving

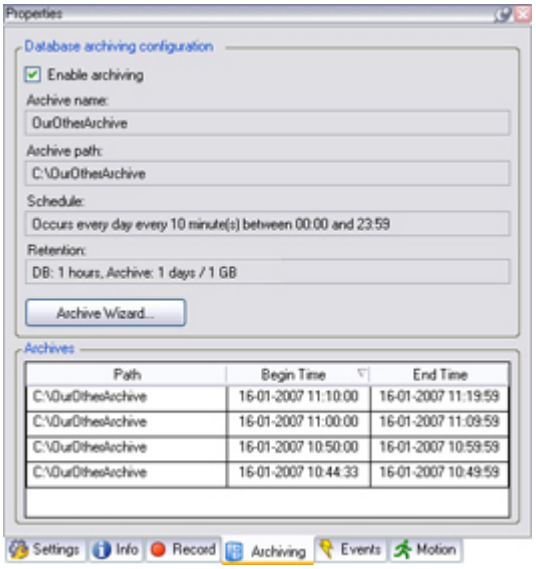
You are able to view and manage the archiving settings of a selected microphone on the *Archiving* tab.

Note: Being able to manage a microphone's archiving settings requires that one or more archives have been defined on the recording server to which the microphone belongs. See About Archiving for more information.

Note: Another tab called *Archiving* will be displayed if you view the properties of a recording server; this is where you create and manage the recording server's archives. For more information, see *Archiving* tab (Recording Server Properties).

What is archiving? Archiving is the automatic transfer of recordings from a microphone's default database to another location. This way, the amount of recordings you are able to store will not be limited by the size of the microphone's default database. Archiving also makes it possible to back up your recordings on backup media of your choice. See About Archiving for more information.

To access the *Archiving* tab, select the required microphone in the overview pane, then select the *Archiving* tab in the properties pane.



- ### Database Archiving Configuration

  The *Database archiving information* section in the upper part of the tab contains the following:

  - ***Enable archiving*:** Only available if one or more archives have been created on the recording server. Selecting box lets you enable archiving for the microphone in question. If you do not use the *Archive Wizard* to specify otherwise, archiving of recordings from the microphone will take place in the recording server's default archive.

  - ***Archive name*:** Name of the archive selected for the recording server.

  - ***Archive path*:** Path to the archive directory.

  - ***Schedule*:** Archiving schedule (i.e. how often archiving should take place). Scheduling is defined for each of a recording server's archives, and thus depends on the selected

archive.

- ***Retention*:** Retention time for database (in hours) and archive (in days and GB), as specified when defining archives through the Archive Wizard.

- ### Using Archive Wizard to Select Archive for Microphone

  When archiving is enabled for a microphone, the microphone's recordings will by default be archived in the default archive of the recording server to which the microphone belongs.

  If more than one archive has been created on the recording server, you can use the *Archive Wizard* to archiving location for the microphone:

  1. Click the *Archiving* tab's *Archive Wizard...* button to open the *Database Archiving Configuration Wizard*—normally just referred to as the *Archive Wizard*.

  2. When dealing with a microphone, the wizard only offers one option: *Select archive for device*. Click *Next* to continue.

  3. In the *Archive Name* column, select the required archive. You cannot select more than one archive for a microphone. If you later want to use another archive for the microphone, you can run the wizard again.

     Click *Next*.

  4. The microphone's archiving settings will be changed to reflect your selection. A progress bar will indicate how the change progresses.

     The wizard will display a confirmation. If the selected archive could not be used, the wizard will display a link to detailed information about what caused the problem.

  5. Click *Finish*.

- ### List of Performed Archivings for Microphone

  Each time archiving is performed for a microphone—according to the scheduling defined for the selected archive—the archived recordings are stored in separate subdirectories under the selected archive location.

  Technically, each performed archiving is thus stored individually, although this fact will be completely transparent when browsing the archived recordings in access clients, such as Ocularis Client Lite.

  The fact that archived recordings are stored individually means that you are able to view a list of each performed archiving, with exact timestamps information about the recordings included in each performed archiving:

  - ***Path*:** Path to the archive directory.

  - ***Begin time*:** Date and time of the oldest recording included in the performed archiving.

  - ***End time*:** Date and time of the most recent recording included in the performed archiving.

Events

Some devices are capable of creating events themselves. Such events can in be used when creating event-based rules in NetEVS. Events from such devices are called hardware configurable events, as they technically occur on the actual camera hardware rather than on the surveillance system.

For microphones supporting events, you are able to manage the hardware configurable events on the *Events* tab. To access the *Events* tab, select the required microphone in the overview pane, then select the *Events* tab in the properties pane.

Note: The *Events* tab will only be available if the selected microphone supports hardware configurable events.

Even when a microphone supports hardware configurable events, it is always your decision whether you want to use such events on your NetEVS system. Therefore, you simply add each hardware configurable event you want to be able to use on each microphone.

- ## Adding a Hardware Configurable Event

  1. Click the *Add New...* button. This will open the *Select Driver Event* window.
  2. In the *Select Driver Event* window, select the required hardware configurable event.

     Note: You can only select one hardware configurable event at a time.
  3. Click *OK*. The selected event will be added to the *Events* tab's list of configured events.
  4. Click the *Save* button in the Management Client's toolbar:

- ## Specifying Hardware Configurable Event Properties

  For each hardware configurable event you have added, you are able to specify properties.

  The number of properties you are able to specify depends on the microphone in question. In order to work as intended, some or all of the properties must be specified identically on the microphone device as well as on NetEVS.

  One property you will always see is:

  - ***Enabled*:** Determines whether use of the hardware configurable event is enabled. Select *True* to enable; select *False* to disable.

- ## Using Several Instances of a Hardware Configurable Event

  You are able to add a hardware configurable event more than once. The reason for this is that you are able to specify different properties for each instance of the event.

- ## Deleting a Hardware Configurable Event

  Note: Keep in mind that deleting a hardware configurable event will affect any rules in which the event is used.

  1. In the *Events* tab's *Configured Events* list, select the no longer required event.

     Tip: If there are several instances of the same event, use the properties list in the right

side of the tab to verify that you have selected the correct event.

2. Click the *Delete* button.

   Note: The selected event will be deleted without further warning.

3. Click the *Save* button in the Management Client's toolbar:

Multicasting

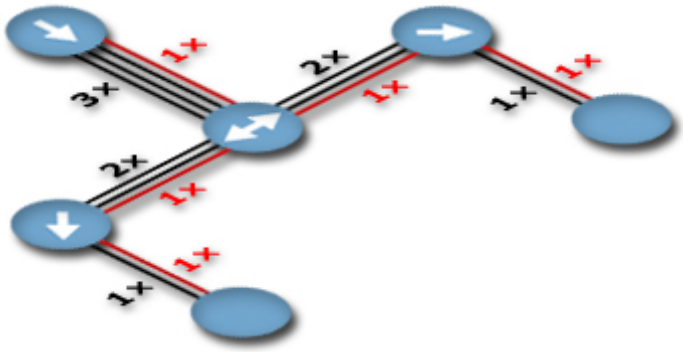
NetEVS supports multicasting of live streams from recording servers. In cases when many Ocularis Client Lite users want to view live video from the same camera, multicasting can help save considerable system resources. Multicasting is thus particularly useful if using Ocularis Client Lites' NetMatrix functionality, where multiple Ocularis Client Lite users often require live video from the same camera.

Multicasting is only possible for live streams; not for recorded video/audio.

- **What Is Multicasting?**

  In regular network communication, each data packet is sent from a single sender to a single recipient—a process known as *unicasting*. With *multicasting*, however, it is possible to send a single data packet to multiple recipients within a group. Multicasting can thus help save bandwidth. Look at the following illustration of a very simple network:

  - When using **unicasting** (***black*** lines in example), the source must transmit one data stream for each recipient.
  - When using **multicasting** (***red*** lines in example), however, only a single data stream is required on each network segment.



  Even on a very simple network like the one in our example, multicasting uses up to 3 times less bandwidth than unicasting. Multicasting is therefore an interesting option for streaming live video from recording servers to Ocularis Client Lites since video streams will not be duplicated on each network segment.

  With multicasting, you work with a clearly defined group of recipients, based on options such as IP address ranges, the ability to enable/disable multicast for individual cameras, the ability to define largest acceptable data packet size (MTU), the maximum number of routers a data packet must be forwarded between (TTL), etc. Thus, multicasting should not be confused with the much more primitive method *broadcasting*, which would send data to everyone connected to the network, even if the data is perhaps not relevant for everyone:

  - *Unicasting* sends data from a single source to a single recipient

- *Multicasting* sends data from a single source to multiple recipients within a clearly defined group
- *Broadcasting* sends data from a single source to everyone on a network; broadcasting can thus significantly slow down network communication

Note: The successful implementation of multicasting also requires that your network equipment (switches, etc.) has been set up to relay multicast data packets to the required group of recipients only. If not; multicasting may not be different from broadcasting.

- ### What Are the Requirements?

  In order to use multicasting, your network infrastructure must support IGMP (Internet Group Management Protocol, an IP multicasting standard).

  Furthermore, multicasting must be configured through the Management Client as described in Managing Multicasting.

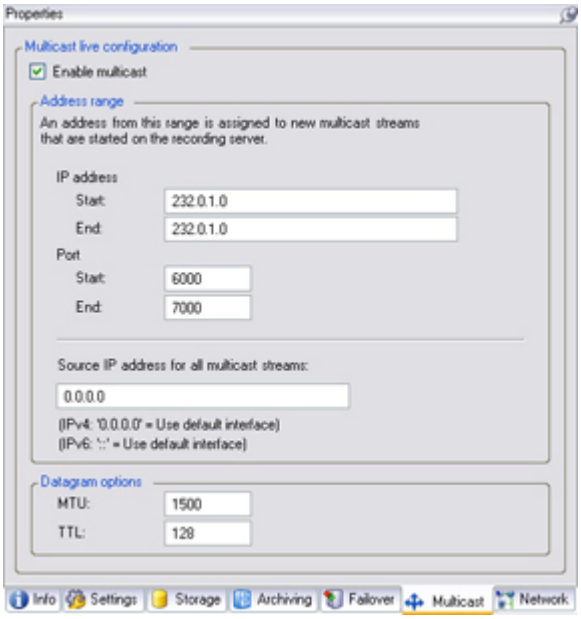
Note: If a recording server has more than one network interface card, it is only possible to multicast on one of them. Through the Management Client you are able to specify which one to use.

Read more about multicasting in Managing Multicasting.

You specify multicasting settings for a recording server on the *Multicast* tab. To access the *Multicast* tab, expand *Recording Servers* in the Management Client's navigation pane, select the required recording server, then select the *Multicast* tab in the properties pane.

Multicasting is only possible for live streams; not for recorded video/audio.

Note: The successful implementation of multicasting also requires that your network equipment (switches, etc.) has been set up to relay multicast data packets to the required group of recipients only. If not; multicasting may not be different from broadcasting, which can significantly slow down network communication. See also About Multicasting.



- ### Enabling Multicasting

  On the *Multicast* tab, select the *Enable multicast* check box.

  If the entire IP address range for multicast (see below) is already in use on one or more other recording servers, you cannot enable multicasting on further recording servers without freeing up some multicasting IP addresses first.

- ### Address Range

  In this section you specify the range from which you want to assign addresses for multicast streams from the selected recording server. Access clients will connect to these addresses when viewing multicast video from the recording server in question.

  For each multicast camera feed, the IP address/port combination (IPv4 example: 232.0.1.0:6000) must be unique. You can thus either use one IP address and many ports, or many IP addresses and fewer ports. By default, NetEVS suggests a single IP address and a range of 1000 ports, but you can change this as required.

  Example: If you want multicast for 1000 cameras, you would need either:

  - 1 IP address and a range of 1000 different ports, OR
  - a range of 2 IP addresses and a range of 500 different ports (or any matching combination), OR
  - a range of 1000 IP addresses and a single port

  You specify this information in the following fields:

  - ***IP address*:** In the *Start* field, specify the first IP address in the required range. Then specify the last IP address in the range in the *End* field.

    Tip: If required, a range may include only one IP address (IPv4 example: 232.0.1.0-232.0.1.0).

    Tip: IP addresses for multicasting must be within a special range set aside for dynamic host allocation by IANA (the authority overseeing global IP address allocation). If using IPv4, you can read more about the range, which goes from 232.0.1.0 to 232.255.255.255, at www.iana.org/assignments/multicast-addresses. If using IPv6, the range is different; see www.iana.org/assignments/ipv6-multicast-addresses.

  - ***Port*:** In the *Start* field, specify the first port number in the required range. Then specify the last port number in the range in the *End* field.

  - ***Source IP address for all multicast streams*:** If a recording server has more than one network interface card, it is only possible to multicast on one of them. This field is therefore relevant if your recording server has more than one network interface card—or if it has a network interface card with more than one IP address.

    To use the recording server's default interface, leave the value 0.0.0.0 (IPv4) or :: (IPv6) in the field. If you want to use another network interface card, or a different IP address on the same network interface card, specify the IP address of the required interface.

- ### Datagram Options

  In this section you specify settings for data packets (datagrams) transmitted through multicasting.

- ***MTU*:** Maximum Transmission Unit, the largest allowed physical data packet size (measured in bytes). Messages larger than the specified MTU will be split into smaller packets before being sent. Default value is 1500, which is also the default on most Windows computers and Ethernet networks.

- ***TTL*:** Time To Live, the largest allowed number of hops a data packet should be able to travel before it is discarded or returned. A hop is a point between 2 network devices, typically a router. Default value is 128.

- **Enabling Multicasting for Individual Cameras**

  Even when you have specified multicasting settings for the selected recording server, multicasting will not work until you enable it for required cameras:

  Select the required recording server in the Management Client's navigation pane, select the required camera in the overview pane, then select *Enable live multicast* on the *Client* tab in the properties pane. Repeat for all required cameras under the recording server in question.

Multi-streaming

Viewing of live video and playing back of recorded video does not necessarily require the same settings in order to achieve the best result. Example:

- For viewing **live** video, your organization may prefer MPEG4 at a high frame rate.

- For playing back **recorded** video, your organization may prefer MJPEG at a lower frame rate because this will help preserve disk space.

Some cameras therefore support multi-streaming, with which you can establish 2 independent streams—a stream for live viewing and another stream for playback purposes.

Note: Only some cameras support multi-streaming. Even when cameras support multi-streaming, individual multi-streaming capabilities may vary considerably between different cameras. Refer to the documentation for your cameras for exact information.

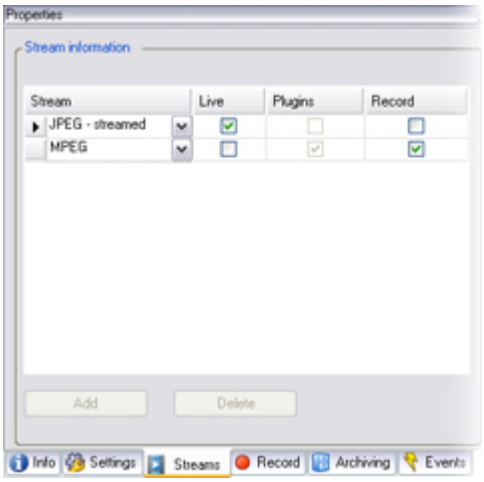
NetEVS supports such multi-streaming so cameras can establish 2 independent streams to the recording server, with different resolution, encoding, and frame rate.

For more information, see Managing Multi-streaming.
Some cameras support multi-streaming, with which you can establish two independent streams to the recording server—a stream for live viewing and another stream for playback purposes, with different resolution, encoding, and frame rate.

Note: Only some cameras support multi-streaming. Even when cameras support multi-streaming, individual multi-streaming capabilities may vary considerably between different cameras. Refer to the documentation for your cameras for exact details. To see if a camera offers different types of streams, you can also view the *Settings* tab.

Manage multi-streaming on the *Streams* tab. The tab is only available when the selected camera or device group supports multi-streaming. However, if you select a device group with 400 or more cameras, the *Streams* tab will not be available for viewing and editing because changing settings for so many devices in one step takes too long.

To access the *Streams* tab, expand *Devices* in the Management Client's navigation pane, expand the relevant camera folder in the overview pane, select the required camera and then select the *Streams* tab in the properties pane.



The tab will by default list a single stream—the selected camera's default stream, used for live video as well as for video which is being recorded for playback purposes.

- ### How to Add a Second Stream

  1. On the *Streams* tab, click the *Add* button. This will add a second stream to the list (you cannot have more than 2 streams).

  2. In the *Stream* column, select the required type of stream.

  3. If you want to use the stream for live video, select the check box in the *Live* column. Leave the check box cleared if you only want to use the stream for video which will be recorded.

     You can use the same stream for both live and recorded video if required. You cannot use 2 different streams for the same purpose, for example for live video.

  4. If you want to use the stream for recorded video, select the check box in the *Record* column. Leave the check box cleared if you only want to use the stream for live video.

     Note how the selection in the *Plug-ins* column always follows the stream you have selected for recorded video. This is because the integrated plug-in which NetEVS uses for motion detection is always applied on the video stream which will be recorded.

  5. Click the *Save* button in the Management Client's toolbar:

- ### How to Edit Existing Streams

  1. On the *Streams* tab, select the stream you want to edit.

  2. Make the required changes.

  3. Click the *Save* button in the Management Client's toolbar.

- ### How to Remove a Previously Added Stream

  1. On the *Streams* tab, select the unwanted stream.

2. Click the *Delete* button.

3. Click the *Save* button in the Management Client's toolbar.

NAT

A recording server's public IP address is defined on the *Network* tab. To access the *Network* tab, select the required recording server in the overview pane, then select the *Network* tab in the properties pane.

- #### Why Use a Public Address?

  When an access client, such as Ocularis Client Lite, connects to a surveillance system, an amount of initial data communication, including the exchange of contact addresses goes on in the background. This happens automatically, and is completely transparent to users.

  Access clients may connect from the local network as well as from the internet, and in each case the surveillance system should be able to provide suitable addresses so the clients can get access to live and recorded video from the recording servers:

  - When access clients connect locally, the surveillance system should reply with local addresses and port numbers. See also Managing Local IP Address Ranges.

  - When access clients connect from the internet, the surveillance system should reply with the recording server's public address, i.e. the address of the firewall or NAT (Network Address Translation) router, and often also a different port number (which is then forwarded to recording servers).

    To provide access to the surveillance system from outside a NAT (Network Address Translation) firewall, NetEVS lets you use public addresses and port forwarding. This will allow access clients from outside the firewall to connect to recording servers without using VPN (Virtual Private Network). Each recording server (and failover server) can be mapped to a specific port and the port can be forwarded through the firewall to the server's internal address.

    See more about defining the public address below.

- #### Enabling Public Access

  To enable public access, select the *Network* tab's *Enable public access* box.

- #### Defining Public Address and Port

  When public access is enabled, you are able to define the recording server's public address and public port number in the *Public address* and *Public port* fields respectively.

  As public address, use the address of the firewall or NAT router which clients accessing the surveillance system from the internet must go through in order to reach recording servers.

  Specifying a public port number is compulsory; it is always a good idea that port numbers used on the firewall or NAT router are different from the ones used locally.

  Note: When using public access, the firewall or NAT router used must be configured so requests sent to the public address and port are forwarded to the local address and port of relevant recording servers.

- #### Local IP Ranges

  There are cases when the recording server's public address should not be used: When access clients connect from the local network, the surveillance system should reply with local addresses

and port numbers. The surveillance system must therefore be able to determine whether an access client belongs on a local IP range or on the internet.

For this purpose, you are able to define a list of IP ranges which the surveillance system should recognize as coming from a local network. You do this by clicking the *Network* tab's *Configure...* button. See Managing Local IP Address Ranges for more information.

When a client, such as Ocularis Client/Ocularis Client Lite, connects to a surveillance system, an amount of initial data communication, including the exchange of contact addresses goes on in the background. This happens automatically, and is completely transparent to users.

Access clients may connect from the local network as well as from the internet, and in each case the surveillance system should be able to provide suitable addresses so the clients can get access to live and recorded video from the recording servers:

- When access clients connect locally, the surveillance system should reply with local addresses and port numbers.
- When access clients connect from the internet, the surveillance system should reply with the recording servers' public addresses, i.e. the address of the firewall or NAT (Network Address Translation) router, and often also a different port number (which is then forwarded to recording servers).

The surveillance system must therefore be able to determine whether an access client belongs on a local IP range or on the internet. For this purpose, you are able to define a list of IP ranges which the surveillance system should recognize as coming from a local network:

- ### Defining Local IP Address Ranges

  1. In the Management Client's menu bar, select *Tools* > *Options*. This will open the *Options* dialog.

     Tip: You can also access the *Options* dialog from the *Network* tab; this can be handy if you are also configuring the public IP address of a recording server.

  2. In the *Options* dialog, select the *Network* tab.
  3. On the *Network* tab, click the *Add* button.
  4. In the *Range Start* column, specify the first IP address in the required range. Then specify the last IP address in the range in the *Range End* column.

     Tip: If required, a range may include only one IP address (example: 192.168.10.1-192.168.10.1).

  5. If more ranges are required, repeat steps 3-4.
  6. Click *OK*.

- ### Editing Local IP Address Ranges

  1. In the Management Client's menu bar, select *Tools* > *Options*. This will open the *Options* dialog.
  2. In the *Options* dialog, select the *Network* tab.
  3. Overwrite the existing information in the *Range Start* and *Range End* columns as required.
  4. Click *OK*.

- **Removing Local IP Address Ranges**

  1. In the Management Client's menu bar, select *Tools* > *Options*. This will open the *Options* dialog.
  2. In the *Options* dialog, select the *Network* tab.
  3. Select the unwanted IP address range.
  4. Click the *Remove* button.
  5. Click *OK*.

Notification Profiles (E-Mail)

With notification profiles you can set up ready-made e-mail notifications, which can automatically be triggered by a rule, for example when a particular event occurs. You are even able to include still images and AVI video clips in the e-mail notifications.

- **Prerequisites**

  Before you can create notification profiles, you must specify settings for the outgoing SMTP mail server you are going to use for the e-mail notifications.

  Optionally, if you want the notification profile's e-mail notifications to be able to contain AVI video clips, the compression settings for use when generating the AVI files must also be specified.

  ## Outgoing SMTP Mail Server

  1. Go to the Management Client's menu bar, and select *Tools* > *Options...*
  2. In the *Options* window, specify settings for the outgoing SMTP mail server on the *Mail Server* tab. For more information, see Outgoing SMTP Mail Server Settings.

  ## AVI Compression

  1. Go to the Management Client's menu bar, and select *Tools* > *Options...*
  2. In the *Options* window, specify compression settings the *AVI Generation* tab. For more information, see AVI Compression Settings.

- **Adding New Notification Profiles**

  1. In the Management Client's navigation pane, expand *Rules and Alerts*, right-click *Notification Profiles*, and select *Add New Notification Profile...* This will open the *Add New Notification Profile* wizard.
  2. On the wizard's first step, specify the following:

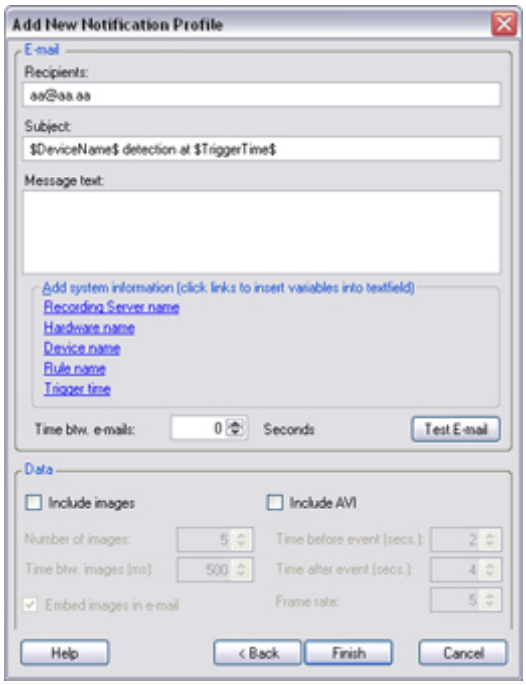
     - ***Name*:** (Compulsory) Type a descriptive name for the notification profile. The name will later appear whenever you select the notification profile during the process of creating a rule.
     - ***Description*:** (Optional) Type a description of the notification profile. The description will, among other places, appear when you pause your mouse pointer

over the notification profile in the overview pane's *Notification Profiles* list:

Click *Next*.

3. On the wizard's second step, verify that *Email* is selected, then click *Next*.

4. On the wizard's third step, specify the following:



- ***Recipients*:** Type the e-mail addresses to which the notification profile's e-mail notifications should be sent.

  If typing more than one e-mail address, separate addresses with a semicolon. Example: aa@aaaa.aa;bb@bbbb.bb;cc@cccc.cc

- ***Subject*:** Type the text you want to appear as the subject of the e-mail notifications.

  Tip: You can insert system variables, such as *Device name*, in the subject field. To insert variables, click the required variable links in the box below the *Message text* field.

- ***Message text*:** Type the text you want to appear in the body of the e-mail notifications. In addition to the message text, the body of each e-mail notification will automatically contain this information:

  - What triggered the e-mail notification.
  - The source of any attached still images or AVI video clips

Tip: You can insert system variables, such as *Device name*, in the message text field. To insert variables, click the required variable links in the box below the field.

- ***Time btw. e-mail*:** Specify required minimum time (in seconds) to pass between the sending of each e-mail notification. Examples:
  - If specifying a value of *120*, a minimum of 2 minutes will pass between the sending of each e-mail notification, even if the notification profile is triggered again by a rule before the 2 minutes have passed.
  - If specifying a value of *0*, e-mail notifications will be sent each time the notification profile is triggered by a rule. This can potentially result in a very large number of e-mail notifications being sent. If using the value *0*, you should therefore carefully consider whether you want to use the notification profile in rules which are likely to be triggered frequently.

5. If you want send a test e-mail notification to the specified recipients, click the *Test E-mail* button.

6. If you want to include still images in e-mail notifications under the notification profile, select *Include images*, and specify the following:

   - ***Number of images*:** Specify the maximum number of still images you want to include in each of the notification profile's e-mail notifications. Default is 5 images.
   - ***Time btw. images (ms)*:** Specify the number of milliseconds you want between the recordings presented on the included images. Example: With the default value of 500 milliseconds, the included images will show recordings with half a second between them.
   - ***Embed images in e-mail*:** If selected (default), images will be inserted in the body of e-mail notifications. If not, images will be included in e-mail notifications as attached files

7. If you want to include AVI video clips in e-mail notifications under the notification profile, select *Include images*, and specify the following:

   - ***Time before event (secs.)*:** This setting is used to specify the start of the AVI file. By default the AVI file will contain recordings from 2 seconds before the notification profile is triggered; you are able to change this to the number of seconds you require.
   - ***Time after event (secs.)*:** This setting is used to specify the end of the AVI file. By default the AVI file will end 4 seconds after the notification profile is triggered; you are able to change this to the number of seconds you require.
   - ***Frame rate*:** Specify the number of frames per second you want the AVI file to contain. Default is 5 frames per second. The higher the frame rate, the higher the image quality and AVI file size.

8. Click the *Finish* button.

- ## Deleting Notification Profiles

1. In the Management Client's navigation pane, expand *Rules and Alerts*, and select *Notification Profiles.* This will show a list of your existing notification profiles in the

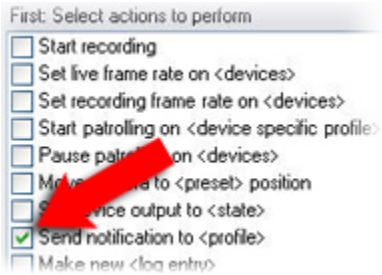
overview pane.

2. In the overview pane, right-click the unwanted notification profile, and select *Delete Notification*.

3. You will be asked to confirm that you want to delete the selected notification profile. In you are sure, click the *Yes* button.

- ### Using Rules to Trigger E-mail Notifications

  Use the *Rule Wizard* for creating rules. The wizard takes you through all required steps. You specify the use of a notification profile during the step on which you specify the rule's actions:



  When selecting the action *Send notification to <profile>*, you get the option of selecting the required notification profile. You also get the option of selecting which cameras any recordings to be included in the notification profile's e-mail notifications should come from:

  Example only; in the *Rule Wizard*, you click the links to make your selections

  Keep in mind that recordings cannot be included in the notification profile's e-mail notifications unless something is actually being recorded.

  If still images or AVI video clips are required in the notification profile's e-mail notifications, you should therefore verify that the rule you are creating—or another existing rule—specifies that recording should take place. The following example is from a rule which includes both a *Start recording* action and a *Send notification to ...* action:

Next: Edit the rule description (click an underlined item)
Perform an action on Input Activated
from Red Sector Door Sensor
start recording 5 seconds before on Red Sector Entrance Cam
and Send notification to 'Security: Red Sector Entrance'
images from Red Sector Entrance Cam
Perform action 10 seconds after
stop recording immediately

  For more information about rules in general, see About Rules.

Options

The Management Client's *Options* dialog lets you specify a number of settings related to the appearance of the application, to logging, to mail server configuration, etc.

You access the *Options* dialog from the Management Client's menu bar, by selecting *Tools* > *options*.

The *Options* dialog features the following tabs:

- **General**

  The *General* tab lets you specify the following:

  - ***Number of log rows to retrieve per page*:** Lets you specify the number of log rows you want to view on a single log page. Default is 50 rows. If a log contains more than the specified number of rows, you will be able view the remaining rows on subsequent log pages.

  - ***Default preview framerate*:** Lets you select which frame rate to use for the thumbnail camera images displayed in the preview pane. Default is 1 frame per second.

    Refreshing the Management Client' layout (by pressing F5 on your keyboard or selecting *Action* > *Refresh* from the menu bar) is required for a change to take effect.

    Note that a high frame rate (i.e. a high image quality) in combination with a large number of thumbnail images in the preview pane may slow the system down. You are able to limit the number of thumbnail images with the *Max. number of previews* setting.

  - ***Max. number of previews*:** Lets you select the maximum number of thumbnail images displayed in the preview pane. Default is 64 thumbnail images.

    Refreshing the Management Client' layout (by pressing F5 on your keyboard or selecting *Action* > *Refresh* from the menu bar) is required for a change to take effect.

    Note that a large number of thumbnail images in combination with a high frame rate (i.e. a high image quality) may slow the system down. You are able to limit the frame rate used for the thumbnail images with the *Default preview framerate* setting.

  - ***Motion detection 'on' when adding camera devices*:** Lets you select whether motion detection should be enabled while cameras are being added to a recording server through the Hardware Detection Wizard.

    Select check box to enable motion detection while using the wizard (default).

    Note that this setting only applies while the Hardware Detection Wizard is in use. When the wizard is not in use, motion detection will be active for all cameras for which it has been enabled, regardless of this setting.

    Why would I want to disable motion detection while using the Hardware Detection Wizard? Motion detection is a key element in the surveillance system, and is thus by default enabled for all cameras on the system. However, motion detection uses a relatively large amount of computing resources. If your system features a very large number of cameras, and motion detection is enabled on all cameras, the system may thus be slowed down slightly, and adding of new cameras may take longer than usual. In order to be able to add new cameras as quickly as possible, you therefore have the option or disabling motion detection while the Hardware Detection Wizard is used.

  - ***Enable multicast live when adding camera devices*:** Lets you select whether multicast should be enabled while cameras are being added to a recording server through the Hardware Detection Wizard.

    Select check box to enable multicast while using the wizard (default).

    Note that this setting only applies while the Hardware Detection Wizard is in use. When the wizard is not in use, multicast will be active for all cameras for which it has been

enabled, regardless of this setting.

- ***PTZ manual session timeout*:** Patrolling of PTZ cameras may be interrupted manually by Ocularis Client Lite users with the necessary user rights. This setting lets you specify how much time should pass before regular patrolling is resumed after a manual interruption. The setting will apply for all PTZ cameras on your NetEVS system.

- **Management Server Logs**

  The *Management Server Log* tab lets you specify settings for NetEVS's 5 different Management Server logs.

  See Logging Settings for more information.

- **Mail Server**

  The *Mail Server* tab lets you specify settings for the outgoing SMTP mail server you are going to use with your NetEVS system.

  See Outgoing SMTP Mail Server Settings for more information.

- **AVI Generation**

  The *AVI Generation* tab lets you specify compression settings for the generation of AVI video clip files. Specifying these settings is a prerequisite if you want to include AVI files in e-mail notifications sent out by rule-triggered notification profiles. See AVI Compression Settings for more information.

- **Network**

  The *Network* tab lets you specify local IP address ranges. See Managing Local IP Address Ranges for more information.

Output

On many devices you are able to attach external units to output ports on the device. This allows you to activate/deactivate lights, sirens, etc. through NetEVS.

Output may be used when creating rules. You can create rules that automatically activate or deactivate outputs, and rules that trigger actions when the state of an output is changed.

Output can also be triggered manually from the Management Client and Ocularis Client Lite.

Devices' output ports are automatically detected when you add the devices to NetEVS through the Management Client's Hardware Detection Wizard, regardless of which of the wizard's detection options you use. By default, output are disabled. You can enable output when needed.

Read more about output management in Managing Output.
You have two entry points for managing outputs:

- In the Management Client's navigation pane, expand *Devices*, select *Outputs*, expand the required device group, and select the required output. If no device groups are available, you must first group your output: See Using Device Groups for information about creating groups as well as adding output to your groups.

- In the Management Client's navigation pane, expand *Servers* and select *Recording Servers*, then in the overview pane expand the required recording server and select the required output.

Note: Before you specify use of external input and output units on a device, verify that sensor operation is recognized by the device. Most devices are capable of showing this in their configuration interfaces, or via CGI script commands. Also check the NetEVS release notes to verify that input- and output-controlled operations are supported for the devices and firmware used.

- ## Enabling Output

  When outputs are detected with the *Hardware Detection Wizard*, they are disabled by default. You can activate outputs when needed.

  If a device has several outputs you can enable one, some, or all of them as required.

  1. In the navigation pane, expand *Servers* and select *Recording Servers*.
  2. In the overview pane select the relevant recording server, and find the device on which the output is placed.
  3. Right-click the required output, and select *Enabled*.

- ## Specifying Output Properties

  Each output has several properties which can be found on the output's *Settings* and *Info* tabs. You can access these tabs in 2 ways:

  - In the navigation pane, expand *Devices* and select *Outputs*, then in the overview pane expand the required outputs folder and select the required output.

    - or -

  - In the overview pane, select a device group to change the settings for all outputs in this group, or expand a device group and select the required output.

  The properties of the selected output, or the common properties for all outputs in a selected device group, will be displayed on the following tabs:

  - ### Info Tab

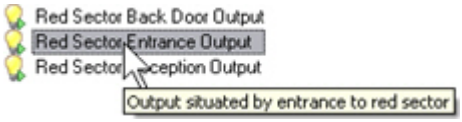
    The *Info* tab lets you view and edit basic information about an output:

    - ***Name*:** Name of the output. The name will be used whenever the output is listed in NetEVS and access clients. A name is not compulsory, but highly recommended. The name does not have to be unique.

      To change the name, overwrite the existing name and click the *Save* button in the Management Client's toolbar.

      Tip: If you change the name, it will be updated throughout NetEVS. This means that if the name is used in, for example, a rule, the name will automatically change in the rule as well.

    - ***Description*:** Description of the output. A description is not compulsory. The description will appear in a number of listings within NetEVS. For example, the description will appear when placing the mouse pointer over the output's name in the overview pane.

      
      Red Sector Back Door Output
Red Sector Entrance Output
Red Sector ception Output
Output situated by entrance to red sector

To specify a description, type the description and click the *Save* button in the Management Client's toolbar.

- ***Hardware name*:** Name of the hardware on which the output is situated. The field is non-editable. However, the hardware name can be changed by clicking the *Go To* button next to the field. Clicking the *Go To* button will take you to the hardware information, where the name is editable.

- ***Unit number*:** Non-editable field, displaying the unit on which the output can be found on the hardware. For hardware capable of having more than one output unit attached, the unit number will typically indicate the number of the output port to which the output is attached. For hardware with, for example, 4 output ports, the numbers will typically range from *0* to *3*.

- ### Settings Tab

The *Settings* tab lets you verify or edit key output settings, such as active output state, output trigger time, etc., for a selected output, or for all outputs within a selected device group. However, if the device group contains 400 cameras or more the *Settings* tab will not be available for viewing and editing because changing settings for so many devices in one step takes too long time.

Note: The content of the *Settings* tab is determined entirely by the drivers for the cameras in question, and is thus likely to vary depending on the output selected.

Note: Some devices are only able to apply outputs for a relatively short time, for example max. 5 seconds. Refer to the documentation for the device in question for exact information.

The content of the *Settings* tab is displayed in a table, in which the first column lists the available settings, and the second column lists the value of each setting.

You are typically able to change the values:

1. Select the row with the property you want to change
2. Click the button to the right of the properties column.
3. Change the value of the property.
4. In the Management Client's toolbar, click the *Save* button.

When you have changed a setting to a non-default value, the value will appear in **bold**. When a value must be within a certain range, for example between 0 and 100, the allowed range will be displayed in the grey information box below the settings table.

- ### Automatic and Manual Activation of Output

Output can be activated automatically or manually:

Automatic Activation of Output
With the Management Client's rules feature, you are able to create rules that automatically activate or deactivate output, and rules that trigger actions when the state of an output is changed.

For example, you may create a rule specifying that a siren should sound if motion is detected on a particular camera, or you may create a rule specifying that a camera should start recording if a siren sounds. See Defining Rules Including Outputs for more information

Manual Activation of Output
Output may be activated manually from the Management Client:

1. In the navigation pane, expand *Devices* and select *Outputs*.
2. In the overview pane, expand the required outputs folder and select the required output.

   Tip: You may select a group of outputs, for example *All Outputs*, to manually activate all outputs in the group.

   Note: The availability of features for manually activating an output depends entirely on the device in question, and may thus vary.

   Typically, the following elements are shown for each output in the preview pane:

3. Select/clear the check box to activate/deactivate the selected output. When an output is activated, the indicator lights up green:

   Alternatively, click the rectangular button to activate the output for the duration defined in the *Output Trigger Time* setting on the *Settings* tab (this feature/setting may not be available for all outputs). After the defined duration, the output is automatically deactivated.

- ## Output List's Status Icons

The following icons are used to indicate the status of each output in the output list:

***Output is enabled*:** An enabled output can communicate with the recording server and can be activated automatically through a rule.

Output is communicating

***Output is temporarily disabled*:** Often shown when the output is communicating with NetEVS while the output is being disabled or enabled.

***Output is disabled*:** A disabled output cannot be activated automatically through a rule; it must be enabled manually in the Management Client. A disabled output will not be able to communicate with the recording server.

Output requires attention

Status unknown

To be able to automatically activate an output or trigger an event activated by an output, you must—after you have enabled an output—include the output in a rule.

For example, you may create a rule specifying that a siren should sound if motion is detected on a particular camera, or you may create a rule specifying that a camera should start recording if a siren sounds.

For the following examples to be useful to you, you should have a general knowledge about how to manage rules. See also About Rules for an introduction to rules, or How to Create Typical Rules for other step-by-step descriptions of how to create rules.

- ## Defining a Rule that Activates/Deactivates an Output

  1. Start the *Rule Wizard* and in step 1 select a rule type and, if necessary, a condition in step 2.
  2. In *Rule Wizard*'s step 3 (*Step 3: Actions*) select the *Set device output to <state>* action.
  3. If you like the output to be activated/deactivated immediately, skip this step. If you do not want to activate or deactivate the output immediately after the event, click the *immediately* link in the initial rule description, and select an interval between the event and the activation/deactivation of the output. Click *OK* to confirm your selection.
  4. Click the *state* link in the initial rule description, and select whether you want to activate or deactivate the output. Click *OK* to confirm your selection.
  5. Click the *devices* link in the initial rule description, and select which output you want to activate or deactivate. Click *OK* to confirm your selection.
  6. If wanted, you can select more actions in the *Rule Wizard*'s step 3 (*Step 3: Actions*). Do so or simply click *Next* to continue to the next step.
  7. In *Rule Wizard*'s step 4 (*Step 4: Stop criteria*) select one of the stop actions, for instance to deactivate the output after a certain time or event.
  8. Click *Finish* to save the rule.

- ## Defining a Rule where an Output Triggers an Action

  In the *Rules* feature, all registered external output (activation, deactivation or change) is treated as an event. Based on an event, you are able to specify a wide variety of actions to take.

  To define a rule where an output activates an action, do the following:

  1. Start the *Rule Wizard*.
  2. In *Rule Wizard*'s step 1 (*Step 1: Type of rule*) select the *Perform an action on <event >* option.
  3. Click the *event* link in the initial rule description.
  4. In the *Select an Event* dialog's *Built-in* group, select the appropriate option for your rule: *Output Activated*, *Output Changed* or *Output Deactivated*. Click *OK* to confirm your selection.
  5. Click the *devices/recorders/servers* link in the initial rule description.
  6. In the *Select Devices and Groups* dialog select the required output. Click *OK* to confirm your selection.

7. Click *Next* to continue to the *Rule Wizard*'s step 2 (*Step 2: Conditions*) and select, if necessary, a condition.

8. Continue to step 3 (*Step 3:Actions*) and select one or more actions.

9. If you do not want to define a stop action, skip this step. If you want to define a stop action—for instance to deactivate the output again—click *Next* to continue to step 4 (*Step 4: Stop criteria*), and select a stop action.

10. Click *Finish* to save the rule.

Tip: When you create a rule based on an output event, the actions you specify in the rule do not have to relate to the device on which the external output was activated; you can easily specify that the actions should take place on one or more different devices—even across recording servers.

Public Addresses

A recording server's public IP address is defined on the *Network* tab. To access the *Network* tab, select the required recording server in the overview pane, then select the *Network* tab in the properties pane.

- #### Why Use a Public Address?

  When an access client, such as Ocularis Client Lite, connects to a surveillance system, an amount of initial data communication, including the exchange of contact addresses goes on in the background. This happens automatically, and is completely transparent to users.

  Access clients may connect from the local network as well as from the internet, and in each case the surveillance system should be able to provide suitable addresses so the clients can get access to live and recorded video from the recording servers:

  - When access clients connect locally, the surveillance system should reply with local addresses and port numbers. See also Managing Local IP Address Ranges.

  - When access clients connect from the internet, the surveillance system should reply with the recording server's public address, i.e. the address of the firewall or NAT (Network Address Translation) router, and often also a different port number (which is then forwarded to recording servers).

    To provide access to the surveillance system from outside a NAT (Network Address Translation) firewall, NetEVS lets you use public addresses and port forwarding. This will allow access clients from outside the firewall to connect to recording servers without using VPN (Virtual Private Network). Each recording server (and failover server) can be mapped to a specific port and the port can be forwarded through the firewall to the server's internal address.

    See more about defining the public address below.

- #### Enabling Public Access

  To enable public access, select the *Network* tab's *Enable public access* box.

- #### Defining Public Address and Port

  When public access is enabled, you are able to define the recording server's public address and public port number in the *Public address* and *Public port* fields respectively.

  As public address, use the address of the firewall or NAT router which clients accessing the surveillance system from the internet must go through in order to reach recording servers.

Specifying a public port number is compulsory; it is always a good idea that port numbers used on the firewall or NAT router are different from the ones used locally.

Note: When using public access, the firewall or NAT router used must be configured so requests sent to the public address and port are forwarded to the local address and port of relevant recording servers.

- ### Local IP Ranges

  There are cases when the recording server's public address should not be used: When access clients connect from the local network, the surveillance system should reply with local addresses and port numbers. The surveillance system must therefore be able to determine whether an access client belongs on a local IP range or on the internet.

  For this purpose, you are able to define a list of IP ranges which the surveillance system should recognize as coming from a local network. You do this by clicking the *Network* tab's *Configure...* button. See Managing Local IP Address Ranges for more information.

Recording Servers

NetEVS recording servers are used for recording video feeds, and for communicating with cameras and other devices. A NetEVS surveillance system will typically contain several recording servers, although only a single recording server is required for the system to work.

Recording servers on your system—i.e. computers with the NetEVS Recording Server software installed, and configured to communicate with the NetEVS Management Server—will be listed in the Management Client's overview pane when you expand the *Servers* folder in the navigation pane and then select the *Recording Servers* node.

Note: Backward compatibility with recording servers from NetEVS versions older than 3.0 is limited. You can still access recordings on such older recording servers; but in order for you to be able to change their configuration, they must be of version 3.0 or later. It is thus highly recommended that all recording servers in your NetEVS system are upgraded to the latest possible version.

- ### Authorizing a Recording Server

  When first using the system, or when new recording servers have been added to the system, you must authorize the new recording servers.

  Why must I authorize recording servers? In a NetEVS system, recording servers point to the Management Server, not the other way round. In theory, recording servers which you do not want to include in your surveillance system could thus be configured to connect to your Management Server. By authorizing recording servers before they can be used, surveillance system administrators have full control over which recording servers are able to send information to their Management Server.

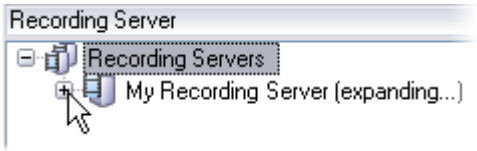
  1. Expand the *Servers* folder in the Management Client's navigation pane and select the *Recording Servers* node.
  2. Right-click the required recording server in the overview pane.
  3. From the menu that appears, select *Authorize Recording Server*:

After a short moment, the recording server will be authorized and ready for further configuration.

- ## Viewing / Editing a Recording Server's Properties

  When a recording server is authorized, you are able to view/edit the recording server's properties, including its database storage area settings:

  When you select the required recording server in the Management Client's overview pane, the recording server's properties are displayed in the properties pane. Expand the required recording server to see which devices are connected to the recording server. While the Management Client loads information about the recording server, the text *(... expanding)* is displayed next to that recording server:



- ## Adding Hardware (Cameras, etc.) to a Recording Server

  Add IP hardware, such as cameras, video encoders, etc., to recording servers on your NetEVS system through the *Hardware Detection Wizard*. The wizard helps you scan your network for relevant hardware. See Hardware Detection Wizard for more information.

- ## Managing Hardware on a Recording Server

  You have several options for managing IP hardware, such as cameras, video encoders, etc., on recording servers on your NetEVS system. See Managing IP Hardware.

- ## Recording Server Icons and what they Signify

  The following icons are used in the Management Client to indicate the state of individual recording servers:

  Recording server is running

  Recording server is communicating

  ***Recording server requires attention*:** This icon will typically appear because the recording server service has been stopped.

  Tip: You can verify whether the recording server is stopped by looking at the recording server icon in the notification area *of the computer running the recording server*. Right-clicking the recording server icon in the notification area opens a menu with which you can

start/stop the recording server service, view recording server status messages, etc. See Recording Server Service Administration for more information.

***Recording server must be authorized*:** Appears when the recording server is loaded for the first time. When first using a recording server, you must authorize it:

1. Right-click the required recording server icon.
2. From the menu that appears, select *Authorize Recording Server*. After a short moment, the recording server will be authorized and ready for further configuration.

***Ongoing database repair*:** Appears when databases have become corrupted, and the recording server is repairing them. The repair process may take considerable time if the databases are large.

IMPORTANT: During the database repair it is not possible to record video from cameras connected to the recording server in question. Live video viewing will still be possible.

How can databases become corrupted? Databases typically become corrupted if the recording server is shut down abruptly, for example due to a power failure or similar. See Protecting Databases from Corruption for useful information about how to avoid corrupt databases.

- ## Renaming a Recording Server

1. Expand the *Servers* folder in the Management Client's navigation pane and select the *Recording Servers* node.
2. Right-click the required recording server listed in the overview pane.
3. From the menu that appears, select *Rename Recording Server*.

   Tip: As an alternative to using the menu, press the F2 key on your keyboard.
4. You are now able to overwrite the name of the recording server in the overview pane.

- ## Removing a Recording Server

IMPORTANT: Removing a recording server will remove all configuration specified for the recording server through the Management Client, including all of the recording server's associated hardware (cameras, input devices, etc.).

1. Expand the *Servers* folder in the Management Client's navigation pane and select the *Recording Servers* node.
2. Right-click the no longer required recording server in the overview pane.
3. From the menu that appears, select *Remove Recording Server*.
4. You will be asked to confirm that you want to remove the recording server and all of its associated hardware from the NetEVS system. If you are sure, click *Yes*.
5. The recording server and all of its associated hardware will be removed.

- ## Troubleshooting: Missing Recording Servers

If you have installed several recording servers on your surveillance system, the recording servers should automatically be listed in the Management Client.

If your Management Client does not list all the recording servers you have installed, the most likely reason is that the missing recording servers have not been correctly configured to connect to the Management Server (in a NetEVS system, recording servers point to Management Servers, not the other way round).

The configuration normally takes place during one of the steps in the recording server installation process.

During installation of the recording server, you specified recording server setup parameters, among these the IP address or host name of the Management Server to which the recording server should be connected:

Fortunately, you do not have to re-install recording servers in order to specify which Management Servers they should connect to. Once a recording server is installed, you can verify/change its basic configuration the following way:

How to Verify/Change to which Management Server a Recording Server Connects

Note: In order to verify/change a recording server's basic configuration, the recording server service must be stopped. This means that recording and live viewing will not be possible while you verify/change the recording server's basic configuration.

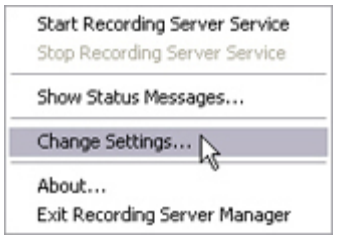
1. On the computer running the recording server, right-click the recording server icon in the notification area:

Tip: The notification area is occasionally also known as the *system tray*, it is located at the far right of the recording server computer's Windows taskbar.

2. From the menu that appears, select *Stop Recording Server Service*:

3. Right-click the notification area's recording server icon again.

4. From the menu that appears, select *Change Settings...*:



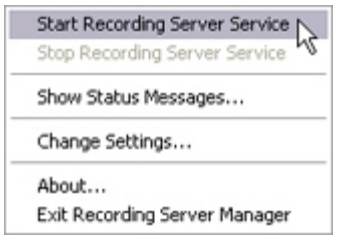
The *Recording Server Settings* window appears. Verify/change the following settings:

- **Management Server hostname / IP address:** Lets you specify the IP address (example: 123.123.123.123) or host name (example: ourserver) of the Management Server to which the recording server should be connected. This information is necessary in order for the recording server to be able to communicate with the Management Server.

- **Management Server port:** Lets you specify the port number to be used when communicating with the Management Server. Default is port 9993, although you are able to change this if required.

5. Click *OK*.

6. To start the recording server service again, right-click the notification area's recording server icon, and select *Start Recording Server Service*:



If a Recording Server is malfunctioning and you want to replace it with a new server, while letting the new server inherit the settings of the old, malfunctioning recording server, do the following:

1. Retrieve the Recording Server ID from the old recording server;

   a. Open the Management Client.

   b. In the Management Client's Navigation Pane select *Recording Servers*, then in the Overview Pane select the required, old recording server.

   c. In the Management Client's Properties Pane, select the *Storage* tab.

   d. Press and hold down the CTRL key on your keyboard while selecting the *Info* tab.

   e. Copy the recording server ID found in the lower part of the *Info* tab. Do not copy *ID* = but only the ID itself.

f. **IMPORTANT:** Stop the *Recording Server service* on the old recording server, then in Windows' *Services* set the service's *Startup type* to *Disabled.*

2. Replace recording server ID on the new recording server:

a. Make sure that the *Recording Server service* is stopped and disabled on the old recording server.

Note: It is very important that you do not start two recording servers with identical IDs at the same time.

b. On the new recording server, open an explorer and go to C:\ProgramData\OnSSI\NetEVS Recording Server.

c. Open the file *RecorderConfig.xml*.

d. Delete the ID stated in between the tags <*id*> and </*id*>.

e. Paste the copied recording server ID in between the tags <*id*> and </*id*>. Save the *RecorderConfig.xml* file.

f. Restart the recording server service. When the new recording server service starts up, the recording server has inherited all settings on the old recording server.

Tip: The procedure described above also applies if you re-install Windows on the computer running the recording server, even if you do not replace the computer running the recording server.

Database Management

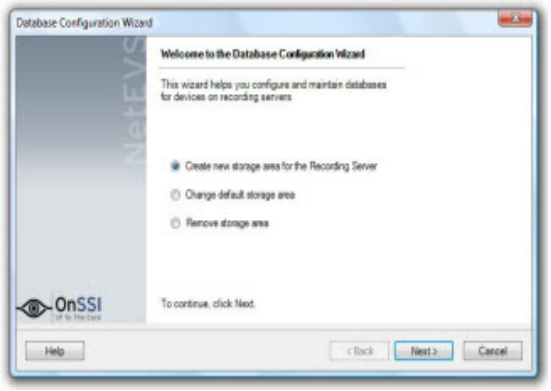
When working with a recording server, you manage the recording server's database storage areas through the *Database Configuration Wizard*, which conveniently guides you through each process.

What is a storage area? A storage area is a directory in which database content—primarily recordings from the cameras connected to the recording server—is stored. A default storage area is automatically created for each recording server when the recording server is installed on the system. Recordings from connected cameras are stored in individual camera databases in the recording server's default storage area; unless you specifically define that another storage area should be used for storing the databases of particular cameras. Through the wizard you can add further storage areas (on the recording server computer itself, or at another location, for example on a network drive), edit which storage area should be the default area, etc.

IMPORTANT: To ensure the smooth running of the system, there must always be at least 500 MB of free space on a storage area. If less than 500 MB of free space is available, data will automatically be deleted until 500 MB of free space is again available on the storage area.

IMPORTANT: We recommend that you use a dedicated hard disk drive for the recording server database. Using a dedicated hard disk drive for the database will prevent low disk performance.

To open the *Database Configuration Wizard*, select the required recording server in the Management Client's overview pane, then select the *Storage* tab in the properties pane. On the *Storage* tab, click the *Database Wizard...* button to open the *Database Configuration Wizard*. When you open the *Database Configuration Wizard* this way, it lets you select between 3 options:


Database Configuration Wizard
Welcome to the Database Configuration Wizard
This wizard helps you configure and maintain databases for devices on recording servers
Create new storage area for the Recording Server
Change default storage area
Remove storage area
OnSSI
To continue, click Next.
Help
< Back
Next >
Cancel

Database Configuration Wizard, displaying recording server database storage area management options

Tip: The *Database Configuration Wizard* lets you select different options if opened while working with individual cameras; see *Camera Database Management*.

- ## Create New Storage Area for Recording Server

  To create a new storage area for use by a recording server, do the following in the *Database Configuration Wizard*:

  1. On the wizard's first step, select *Create new storage area on recording server*, and click *Next*.

  2. On the second step of the wizard, specify the following information in the vacant (white) row:

     - ***Storage Name*:** A descriptive name for the new storage area.

     - ***Path*:** The path to the directory in which the new storage area should be located. The storage area does not necessarily have to be on the recording server computer itself.

       IMPORTANT: We recommend that you use a dedicated hard disk drive for the recording server database. Using a dedicated hard disk drive for the database will prevent low disk performance.

       Tip: The directory does not have to be an existing directory; if it does not exist, it will automatically be created.

Storage Name	Path	Device Usage	Default
Local Default	C:\MediaDatabase	17	☑
New Storage Area	C:\MediaDatabase\NewArea		☐

Example: Specifying name and path of a new storage area

     - ***Device Usage*:** The field displays a link to information about which devices are using the particular storage area, i.e. which camera's recordings are stored there. Since you still are in the process of creating the new storage area, no devices will yet be using it. Later, you are able to select use of particular storage areas for particular cameras when opening the *Database Configuration Wizard* while working with a camera; see *Camera Database Management*.

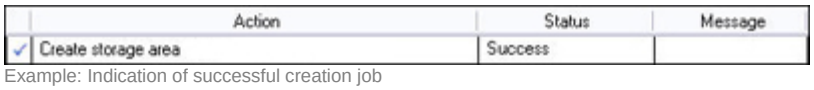
     - ***Default*:** The check box lets you select if the new storage area should be the recording server's default storage area, i.e. the storage area in which database content is automatically stored unless you specifically define other storage

areas for particular cameras. Note that only one storage area can be the default area.

Then click *Next*.

3. The new storage area will be created. A bar displays how the creation job progresses:

When the creation job is complete, you will be informed whether the job was successful or whether it failed. If the job failed, you will be able to view a status message indicating what caused the failure.



Example: Indication of successful creation job

Example: Indication of failed creation job, with link to status message

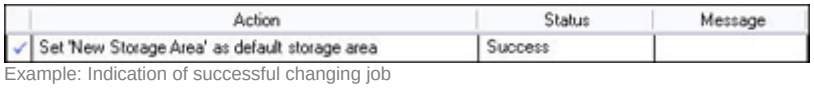
4. Click *Finish*.

- ## Change Default Storage Area

To change the default storage area on a recording server, do the following in the *Database Configuration Wizard*:

1. On the wizard's first step, select *Change default storage area*, and click *Next*.
2. In the *Default* column on the second step of the wizard, select the storage area you want to become the default storage area. Note that only one area can be the default storage area. Then click *Next*.
3. The default storage area will be changed. A bar displays how the changing job progresses:

When the changing job is complete, you will be informed whether the job was successful or whether it failed. If the job failed, you will be able to view a status message indicating what caused the failure.



Example: Indication of successful changing job

Example: Indication of failed changing job, with link to status message

4. Click *Finish*.

- ## Remove Storage Area

To remove an existing storage area on a recording server, do the following in the *Database Configuration Wizard*:

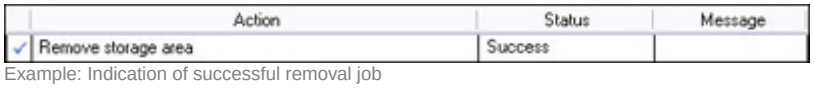
1. On the wizard's first step, select *Remove storage area on recording server*, and click *Next*.

2. In the leftmost column on the second step of the wizard, select the storage area you want to remove. Then click *Next*.

   Note: Storage areas in use by cameras cannot be selected. If the storage area you want to remove is in use by cameras, do the following: First click the link in the *Device Usage* column to see which cameras are using the storage area. Then change the storage area for the cameras in question (the procedure is described under *Camera Database Management*). Upon doing this, you will be able to remove the storage area.

3. The storage area will be removed without further warning. A bar displays how the removal job progresses:

   When the removal job is complete, you will be informed whether the job was successful or whether it failed. If the job failed, you will be able view a status message indicating what caused the failure.

   Example: Indication of successful removal job

   Example: Indication of failed removal job, with link to status message

4. Click *Finish*.

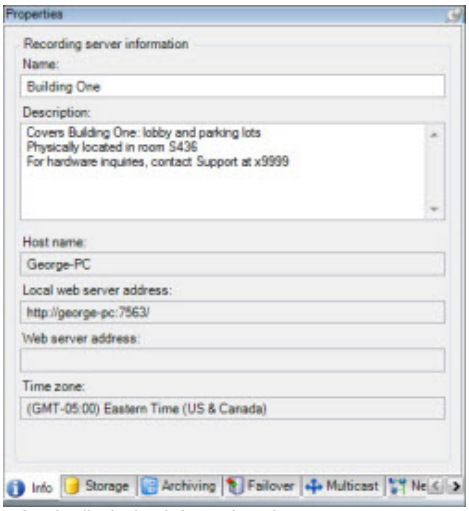
- ### Frequently Asked Questions about Storage Areas

  Can I Create a Storage Area on a Network Drive?
  A storage area does not necessarily have to be a directory on the recording server computer itself; you can create the storage area in any directory which can be reached by NetEVS, for example on a network drive.

  What Happens if a Storage Area Becomes Unavailable?
  If a storage area becomes unavailable—for example if the storage area is located on a network drive, and the connection to the drive is lost—it will not be possible to store recordings in the storage area. NetEVS registers the availability of its recording servers' storage areas. This means that when a storage area becomes available again, it will again be possible to save recordings in the storage area. However, any recordings from the period in which the storage area was unavailable will be lost. When creating rules, you can use the events *Database Storage Area Unavailable* and *Database Storage Area Available* to trigger actions, such as the automatic sending of e-mail alerts to relevant people in your organization (see Events Overview for more information). Furthermore, information about a storage area becoming unavailable/available will be logged.

Recording Server Properties

You are able to verify or edit the name and description of a selected recording server on the *Info* tab. To access the *Info* tab, select the required recording server in the overview pane, then select the *Info* tab in the properties pane.



Info tab, displaying information about a recording server

- ## Info Tab's Fields

  - ***Name*:** Name of the recording server. The name will be used whenever the recording server is listed in NetEVS and access clients. A name is not compulsory, but highly recommended. The name does not have to be unique.

    To change the name, simply overwrite the existing name and click the *Save* button in the Management Client's toolbar.

    Tip: If you change the name, it will be updated throughout NetEVS. This means that if the name is used in, for example, a rule, the name will automatically change in the rule as well.

  - ***Description*:** Description of the recording server. The description will appear in a number of listings within NetEVS. For example, the description will appear when pausing the mouse pointer over the recording server's name in the overview pane. A description is not compulsory.

    To specify a description, simply type the description and click the *Save* button in the Management Client's toolbar.

  - ***Host name*:** Non-editable field, displaying the recording server's host name.

  - ***Web server URL*:** Non-editable field, displaying the URL of the recording server's web server. The web server is used, for example, for handling PTZ camera control commands, and for handling browse and live requests from Ocularis Client Lites. The URL will include the port number used for web server communication (typically port 7563).

  - ***Time zone*:** Non-editable field, displaying the time zone in which the recording server is located.

You are able to verify or edit the settings, if any, of a selected recording server on the *Settings* tab. To access the *Settings* tab, select the required recording server in the overview pane, then select the *Settings* tab in the properties pane.

Note: The content of the *Settings* tab is determined entirely by the recording server in question, and may thus vary depending on the recording server selected. For some recording servers, no settings will be available.

Any content on the *Settings* tab will be displayed in a table, in which the first column lists the available settings, and the second column lists the value of each setting.

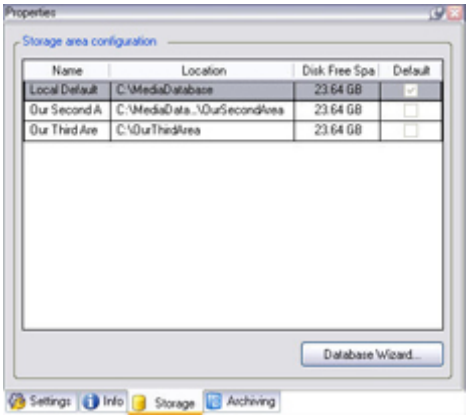
You are typically, but not always, able to change the values. When you have changed a setting to a non-default value, the value will appear in **bold**. When a value must be within a certain range, for example between 0 and 15, the allowed range will be displayed in the information box below the settings table.

You are able to view and manage storage areas on a selected recording server on the *Storage* tab.

What is a storage area? A storage area is a directory in which database content—primarily recordings from the cameras connected to the recording server—is stored. A default storage area is automatically created for each recording server when the recording server is installed on the system. Recordings from connected cameras are stored in individual camera databases in the recording server's default storage area; unless you specifically define that another storage area should be used for storing the databases of particular cameras.

To access the *Storage* tab, select the required recording server in the overview pane, then select the *Storage* tab in the properties pane.

The *Storage* tab lists storage areas defined for the selected recording server. It furthermore lets you access the Database Configuration Wizard, with which you are able create, change, or remove storage areas.



- ### Storage Tab's Columns

  Information on the *Storage* tab is presented in the following columns:

  - ***Name*:** Name of the storage area.
  - ***Location*:** The path to the directory in which the storage area is located.
  - ***Disk Free Space*:** Free space left on the disk used for storage area (i.e. *not* free space left in the storage area itself).
  - ***Default*:** Selected check box indicates which storage area is the recording server's default storage area, i.e. the storage area in which database content is automatically stored

unless you specifically define other storage areas for particular cameras. Note that only one storage area can be the default area.

You are able to view and manage the archiving settings of a selected recording server on the *Archiving* tab. Management of the recording server's archiving settings takes place through the Archive Wizard, which you can access from the *Archiving* tab. Note that archiving is set up by adjusting six interdependent parameters correctly, as described in About Archiving.

What is archiving? Archiving is the automatic transfer of recordings from a camera's default database to another location. This way, the amount of recordings you are able to store will not be limited by the size of the camera's default database. Archiving also makes it possible to back up your recordings on backup media of your choice. See About Archiving for more information.

To access the *Archiving* tab, select the required recording server in the overview pane, then select the *Archiving* tab in the properties pane.

Note: Another tab called *Archiving* will be displayed if you view the properties of an individual camera; this is where you enable/disable archiving for the camera in question. For more information, see *Archiving* tab (Camera Properties).

- ### Archiving Tab's List of Archives

  Each archive you have added through the Archive Wizard will be listed with the following information:

  - ***Name*:** Name of the archive.
  - ***Progress*:** Displays the percentage of completion for any ongoing archiving process. If archiving is not ongoing, no information is displayed.
  - ***Location*:** Path to the archive directory.
  - ***Disk Free Space*:** Free space left on the disk on which the archive is located; *not* free space left in the archive itself.
  - ***Used Space*:** Space used in the archive.

- ***Default*:** Checked box indicates which archive is the recording server's default archive.
- ***Schedule*:** Archiving schedule (i.e. how often archiving should take place).

Tip: You may have to use the tab's horizontal scroll bar to view all columns in the list.

- ### Accessing the Archive Wizard

  To access the Archive Wizard from the *Archiving* tab, click the tab's *Archive Wizard...* button.

- ### Monitoring Archives' Status

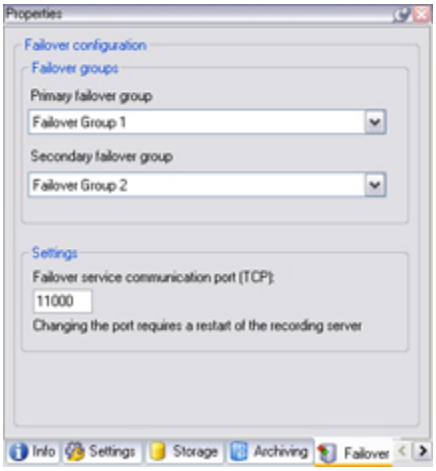
  The lower part of the *Archiving* tab displays status information about the archive you have selected in the list in the upper part of the tab:

  - ***Started*:** Displays the start date and time of any ongoing archiving process. If archiving is not ongoing, no information is displayed.
  - ***Estimated completion*:** Displays an estimated completion time for any ongoing archiving process. If archiving is not ongoing, no information is displayed. While archiving is ongoing, a bar displays the percentage of completion.
  - ***Next scheduled*:** Displays the date and time of the next scheduled archiving.

A failover server is a spare recording server which can take over if a regular recording server becomes unavailable; see also About Failover Servers.

If your organization uses failover servers, use the *Failover* tab to select which groups of failover servers should take over from a regular recording server if the recording server in question becomes unavailable.

To access the *Failover* tab, select the required recording server in the overview pane, then select the *Failover* tab in the properties pane.



- ### Selecting Required Failover Groups

  Failover servers are always grouped; a group can contain one or more failover servers.

Benefit of Using Failover Groups

Grouping has a clear benefit: When you specify which failover servers should be able to take over from a recording server, you do not select a particular failover server; rather you select a failover group. If the selected group contains more than one failover server, this gives you the security of being able to have more than just one failover server ready to take over if the recording server becomes unavailable. For information about configuring failover groups, see Managing Failover Servers.

Primary and Secondary Failover Group

For each recording server, you are able to select a primary and an optional secondary failover group. If the recording server becomes unavailable, a failover server from the primary failover group will take over. If you have also selected a secondary failover group, a failover server from the secondary group will take over in case all failover servers in the primary failover group are busy. This way, you only risk not having a failover solution in the rare case when all failover servers in the primary as well as in the secondary failover group are busy.

How to Select Required Failover Groups

1. Select the required failover group from the *Primary failover group* list.
2. If you also want a secondary failover group for the recording server, repeat the process in the *Secondary failover group* list.

Note: You cannot select the same failover group for use as both primary and secondary failover group.

- **Failover Service Communication Port**

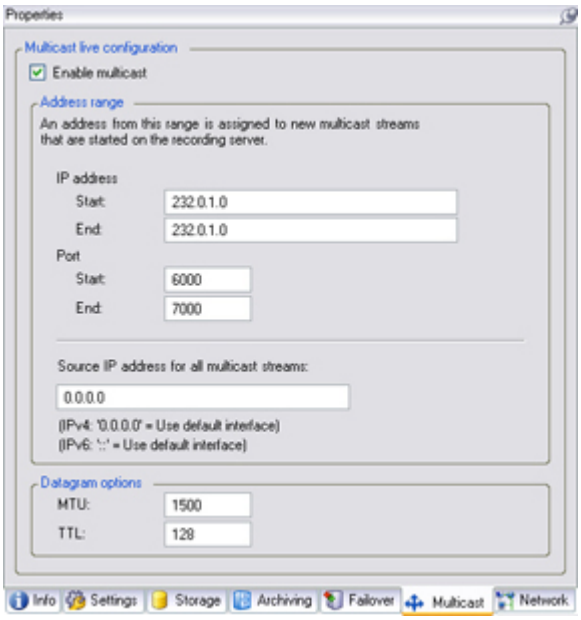
  By default, TCP port 11000 is used for communication between recording servers and failover servers. Such communication is primarily about the configuration of the recording server from which the failover server should take over.

  If required, you can change the port number. Note that if you change the port number, you must restart the Recording Server service on the recording server in question.

You may specify multicasting settings for a recording server on the *Multicast* tab. To access the *Multicast* tab, expand *Recording Servers* in the Management Client's navigation pane, select the required recording server, then select the *Multicast* tab in the properties pane.

Multicasting is only possible for live streams; not for recorded video/audio.

Note: The successful implementation of multicasting also requires that your network equipment (switches, etc.) has been set up to relay multicast data packets to the required group of recipients only. If not; multicasting may not be different from broadcasting, which can significantly slow down network communication. See also About Multicasting.



- ## Enabling Multicasting

  On the *Multicast* tab, select the *Enable multicast* check box.

  If the entire IP address range for multicast (see below) is already in use on one or more other recording servers, you cannot enable multicasting on further recording servers without freeing up some multicasting IP addresses first.

- ## Address Range

  In this section you specify the range from which you want to assign addresses for multicast streams from the selected recording server. Access clients will connect to these addresses when viewing multicast video from the recording server in question.

  For each multicast camera feed, the IP address/port combination (IPv4 example: 232.0.1.0:6000) must be unique. You can thus either use one IP address and many ports, or many IP addresses and fewer ports. By default, NetEVS suggests a single IP address and a range of 1000 ports, but you can change this as required.

  Example: If you want multicast for 1000 cameras, you would need either:

  - 1 IP address and a range of 1000 different ports, OR
  - a range of 2 IP addresses and a range of 500 different ports (or any matching combination), OR
  - a range of 1000 IP addresses and a single port

  You specify this information in the following fields:

  - ***IP address*:** In the *Start* field, specify the first IP address in the required range. Then specify the last IP address in the range in the *End* field.

    Tip: If required, a range may include only one IP address (IPv4 example: 232.0.1.0-232.0.1.0).

Tip: IP addresses for multicasting must be within a special range set aside for dynamic host allocation by IANA (the authority overseeing global IP address allocation). If using IPv4, you can read more about the range, which goes from 232.0.1.0 to 232.255.255.255, at www.iana.org/assignments/multicast-addresses. If using IPv6, the range is different; see www.iana.org/assignments/ipv6-multicast-addresses.

- ***Port*:** In the *Start* field, specify the first port number in the required range. Then specify the last port number in the range in the *End* field.

- ***Source IP address for all multicast streams*:** If a recording server has more than one network interface card, it is only possible to multicast on one of them. This field is therefore relevant if your recording server has more than one network interface card—or if it has a network interface card with more than one IP address.

  To use the recording server's default interface, leave the value 0.0.0.0 (IPv4) or :: (IPv6) in the field. If you want to use another network interface card, or a different IP address on the same network interface card, specify the IP address of the required interface.

- ### Datagram Options

  In this section you specify settings for data packets (datagrams) transmitted through multicasting.

  - ***MTU*:** Maximum Transmission Unit, the largest allowed physical data packet size (measured in bytes). Messages larger than the specified MTU will be split into smaller packets before being sent. Default value is 1500, which is also the default on most Windows computers and Ethernet networks.

  - ***TTL*:** Time To Live, the largest allowed number of hops a data packet should be able to travel before it is discarded or returned. A hop is a point between 2 network devices, typically a router. Default value is 128.

- ### Enabling Multicasting for Individual Cameras

  Even when you have specified multicasting settings for the selected recording server, multicasting will not work until you enable it for required cameras:

  Select the required recording server in the Management Client's navigation pane, select the required camera in the overview pane, then select *Enable live multicast* on the *Client* tab in the properties pane. Repeat for all required cameras under the recording server in question.

A recording server's public IP address is defined on the *Network* tab. To access the *Network* tab, select the required recording server in the overview pane, then select the *Network* tab in the properties pane.

- ### Why Use a Public Address?

  When an access client, such as Ocularis Client Lite, connects to a surveillance system, an amount of initial data communication, including the exchange of contact addresses goes on in the background. This happens automatically, and is completely transparent to users.

  Access clients may connect from the local network as well as from the internet, and in each case the surveillance system should be able to provide suitable addresses so the clients can get access to live and recorded video from the recording servers:

  - When access clients connect locally, the surveillance system should reply with local addresses and port numbers. See also Managing Local IP Address Ranges.

  - When access clients connect from the internet, the surveillance system should reply with the recording server's public address, i.e. the address of the firewall or NAT (Network Address Translation) router, and often also a different port number (which is then

forwarded to recording servers).

To provide access to the surveillance system from outside a NAT (Network Address Translation) firewall, NetEVS lets you use public addresses and port forwarding. This will allow access clients from outside the firewall to connect to recording servers without using VPN (Virtual Private Network). Each recording server (and failover server) can be mapped to a specific port and the port can be forwarded through the firewall to the server's internal address.

See more about defining the public address below.

- ### Enabling Public Access

  To enable public access, select the *Network* tab's *Enable public access* box.

- ### Defining Public Address and Port

  When public access is enabled, you are able to define the recording server's public address and public port number in the *Public address* and *Public port* fields respectively.

  As public address, use the address of the firewall or NAT router which clients accessing the surveillance system from the internet must go through in order to reach recording servers.

  Specifying a public port number is compulsory; it is always a good idea that port numbers used on the firewall or NAT router are different from the ones used locally.

  Note: When using public access, the firewall or NAT router used must be configured so requests sent to the public address and port are forwarded to the local address and port of relevant recording servers.

- ### Local IP Ranges

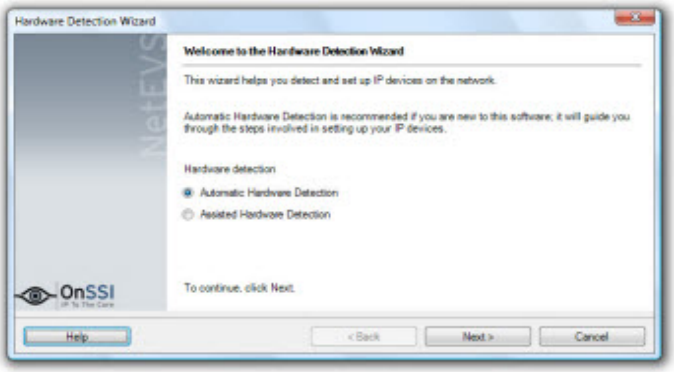
  There are cases when the recording server's public address should not be used: When access clients connect from the local network, the surveillance system should reply with local addresses and port numbers. The surveillance system must therefore be able to determine whether an access client belongs on a local IP range or on the internet.

  For this purpose, you are able to define a list of IP ranges which the surveillance system should recognize as coming from a local network. You do this by clicking the *Network* tab's *Configure...* button. See Managing Local IP Address Ranges for more information.

Adding Hardware (Cameras, etc.)

The *Hardware Detection Wizard* helps you detect IP hardware devices, such as cameras and video encoders, on your network and add them to recording servers on your NetEVS system.

To access the *Hardware Detection Wizard*, expand the *Servers* folder in the Management Client's navigation pane and select the *Recording Server* node, then in the overview pane right-click the required recording server and select *Hardware Detection Wizard...*


Hardware Detection Wizard
Welcome to the Hardware Detection Wizard
This wizard helps you detect and set up IP devices on the network.
Automatic Hardware Detection is recommended if you are new to this software; it will guide you through the steps involved in setting up your IP devices.
Hardware detection
Automatic Hardware Detection
Assisted Hardware Detection
To continue, click Next.
OnSSI
Help
< Back
Next >
Cancel

Hardware Detection Wizard opening page

The wizard offers you 2 ways of detecting and adding hardware devices: With *automatic hardware detection*, NetEVS automatically scans for available hardware within one or more specified IP address ranges. With *assisted hardware detection*, you manually specify the IP address of each required device. Both options offer the possibility of automatically detecting the correct hardware drivers.

Tip: If you are new to NetEVS, use automatic hardware detection; it will guide you through each of the steps involved in detecting and adding your IP devices.

- ### Automatic Hardware Detection

  1. On the first step of the *Hardware Detection Wizard*, select *Automatic Hardware Detection* and click *Next*.

  2. The wizard will then suggest one or more IP address ranges on which to detect devices. The number of suggested ranges will depend on the number of network interface cards on the recording server. By default, NetEVS will scan the IP address range(s) for devices on port 80.

     If the suggested IP address ranges are acceptable, simply go to step 3. Occasionally, you may want to remove or edit the suggested IP address ranges, change the default port number, or add further IP address ranges:

     - #### Removing an Unwanted IP Address Range

       To remove an IP address range, select the unwanted IP address range and click the *Remove* button. You will be asked to confirm that you want to remove the IP address range in question.

     - #### Editing an IP Address Range

       To edit an IP address range, select the required range and click the *Edit* button.

       This will open the *Add IP Range to Scan* dialog, which lets you edit the IP address range by changing the beginning and end of the IP address range as required.

       Tip: The beginning and end IP address may be identical, allowing you to only scan for a single device, if required.

       If scanning for devices which support TCP/HTTP—most devices do—keep the *Use TCP port scanning* box selected.

       You are also able to change the port number to scan (default is port 80).

When NetEVS detects a device, it will automatically access the device with the device's factory default user name and password. If one or more devices within the specified IP address range require a non-factory default user name and/or password, specify such user names and passwords one at a time by clicking the *Add...* button.

Example: IP address range and additional user name and password defined

Click *OK* to return to the wizard.

- ## Adding an IP Address Range

  To add a new IP address range, click the *Add* button.

  This will open the *Add IP Range to Scan* dialog, which lets you edit the IP address range by changing the beginning and end of the IP address range as required.

  Tip: The beginning and end IP address may be identical, allowing you to only scan for a single device, if required.

  You are also able to specify which port number to scan (default is port 80).

  If scanning for devices which support TCP/HTTP—most devices do—keep the *Use TCP port scanning* box selected.

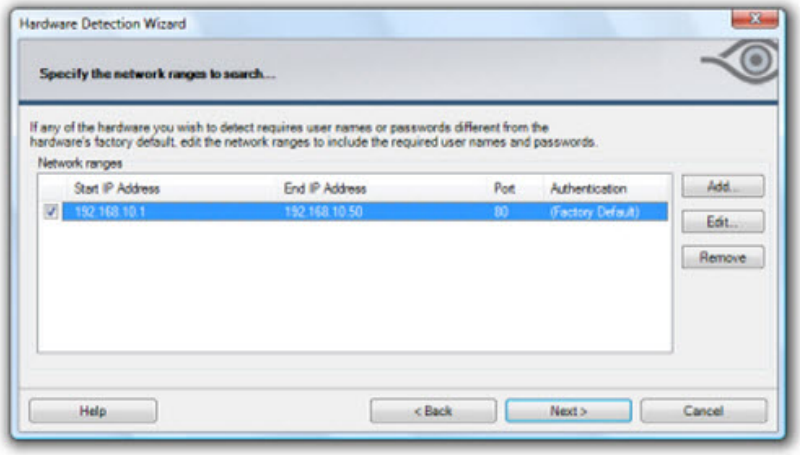
  When NetEVS detects a device, it will automatically access the device with the device's factory default user name and password. If one or more devices within the specified IP address range require a non-factory default user name and/or password, specify such user names and passwords one at a time by clicking the *Add...* button.

Example: IP address range and additional user name and password defined

When ready, click *OK* to return to the wizard.

Note that you cannot add more than 100 devices to a Recording Server at a time. If you need to add more than 100 devices, simply scan several times.

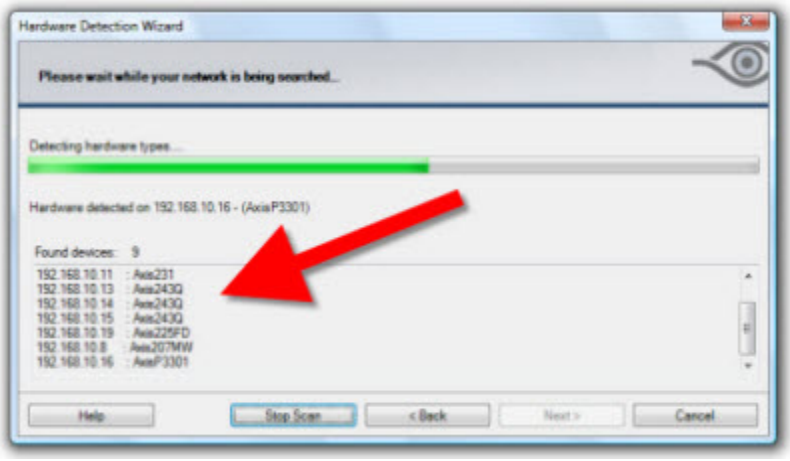
3. When ready, the wizard lists all the IP address ranges you want to scan.



Example: A single IP address range has been defined

Click *Next*.

4. The wizard searches for devices within the defined IP address ranges. Depending on the size of the IP address ranges, and whether they are on the local network or not, this may take a while. While searching, the wizard generates a list of the cameras it detects.

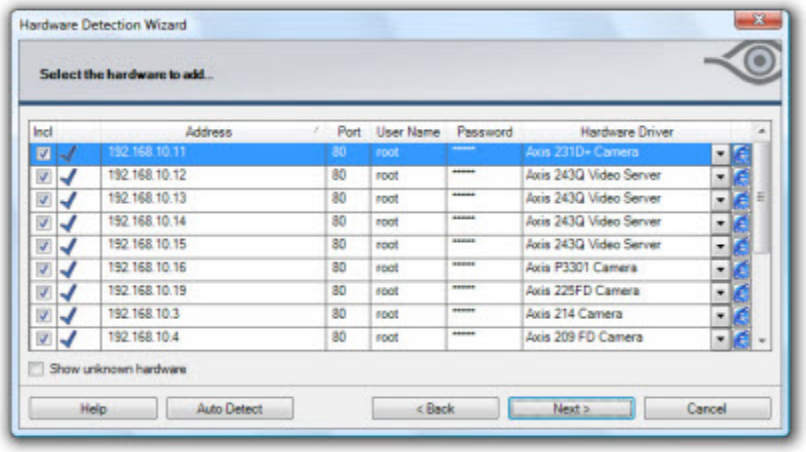


Example: Arrow indicates list generated while wizard searches IP ranges

Tip: Detection may take a while, especially if large IP ranges must be searched. You can interrupt the search at any time by clicking the *Stop Scan* button. Any cameras detected up to this point will be remembered by the wizard.

Also: you may need to add camera user names and passwords if they were changed from the factory defaults. If no cameras are found, click *Back* and then click *Edit*. Click *Add* to include additional User names and Passwords to be used in the search.

5. When the wizard has finished searching, it will list detected devices. Initially, the list will only contain *known hardware*, i.e. devices for which the wizard is automatically able to detect a hardware driver. The wizard is able to automatically detect hardware drives for a very large number of devices.


Hardware Detection Wizard
Select the hardware to add...
Incl
Address
Port
User Name
Password
Hardware Driver
192.168.10.11 80 root ***** Axis 231D+ Camera
192.168.10.12 80 root ***** Axis 243Q Video Server
192.168.10.13 80 root ***** Axis 243Q Video Server
192.168.10.14 80 root ***** Axis 243Q Video Server
192.168.10.15 80 root ***** Axis 243Q Video Server
192.168.10.16 80 root ***** Axis P3301 Camera
192.168.10.19 80 root ***** Axis 225FD Camera
192.168.10.3 80 root ***** Axis 214 Camera
192.168.10.4 80 root ***** Axis 209 FD Camera
Show unknown hardware
Help
Auto Detect
< Back
Next >
Cancel

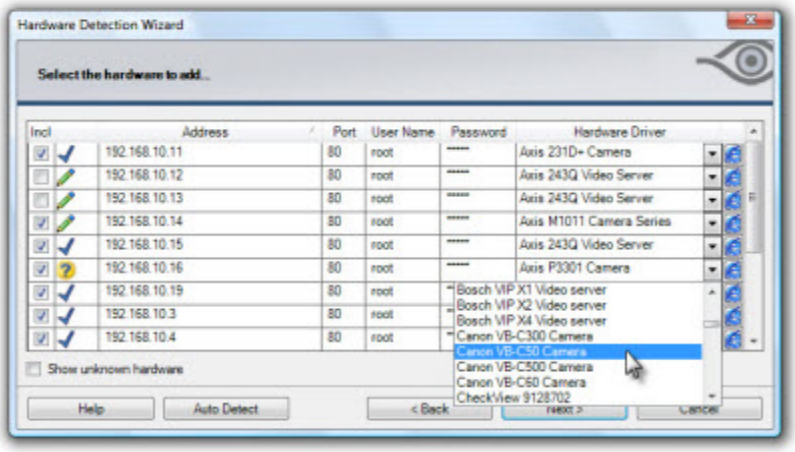
Example: Wizard has automatically detected hardware drivers for a number of cameras

Tip: For a preview image from camera devices in the list, click the browser button to access the camera's default web page. You may be asked to provide the user name and password for the device when accessing it this way.

6. **Optional:** To see any devices for which the wizard has not automatically been able to detect a hardware driver, select the *Show unknown hardware* check box.

This will include any *unknown hardware* in the list. Such unknown devices will be

indicated by question mark icon: . For such devices, you are able to manually specify user name, password and hardware driver.



Example: Manually specifying hardware driver for a device in the defined IP address range. This will seldom be necessary, as the wizard can automatically detect drivers for many devices. Note the green pencil icon indicating the device being manually specified.

Remember to select the *Include* check box for each manually specified device. Click *Next*.

7. On the last step of the wizard, verify the information, then click *Finish*.

8. The devices are added to the recording server, and will appear in the Management Client's lists:

Example of added devices listed in overview pane

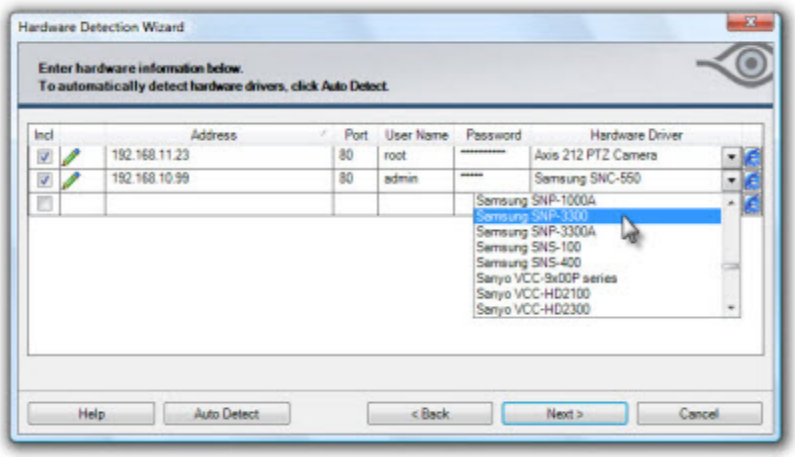
- ## Assisted Hardware Detection

1. On the first step of the *Hardware Detection Wizard*, select *Assisted Hardware Detection* and click *Next*.

2. The wizard will then ask you to enter information about the required hardware. For each required device, specify IP address, port number (if other than the default port 80), user name, password, and hardware driver.

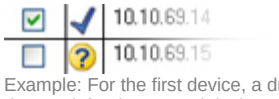
Tip: If you do not specify a user name and password, the factory default user name and password for the device will automatically be added when you make your selection in the *Hardware Driver* column.

Remember to select the *Include* check box for each required device.



Example: Manually selecting hardware driver for a device.
Often, the wizard can automatically detect the driver.

Tip: Provided you have specified a valid user name and password, hardware drivers can often be automatically detected: Simply click the *Auto Detect* button. If the driver is detected, a check mark ✓ will appear in the second column. If the driver cannot be detected, a question mark will appear, in which case you should manually select the required driver.



Example: For the first device, a driver could automatically be detected; for the second device, a driver could not be automatically detected, and must be selected manually

Tip: For a preview image from a camera device in the list, click the browser button to access the camera's default web page. You may be asked to provide user name and password for the device when accessing it this way.

3. Repeat for each required device. Click *Next.*
4. On the last step of the wizard, verify the information. Then click *Finish*.
5. The required devices are added to the recording server, and will appear in the Management Client's lists.

Managing Added Hardware

For each recording server on your system, you have several options for managing added IP hardware.

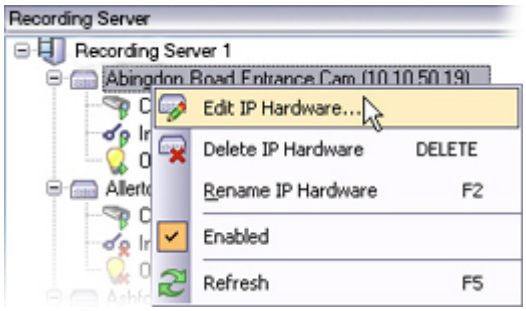
Note: Configuration and management of individual camera settings (such as a camera's recording settings), input settings, and output settings takes place on a more detailed level; see Managing Cameras, Managing Inputs, and Managing Outputs.

- ### Editing Basic Hardware Settings (IP, etc.)

  You are able to edit basic settings, such as IP address/host name, for added hardware:

  1. Under the required recording server in the overview pane, right-click the required hardware unit.

  2. From the menu that appears, select *Edit IP Hardware...*

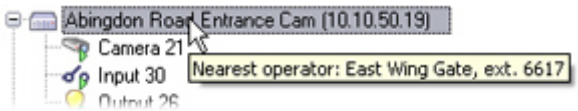


  This will open the *Edit Hardware* window, in which you are able to edit the following:

  - ***Name*:** Name with which the hardware will appear in the Management Client's lists, etc.

    Tip: You are also able to quickly change the name of a hardware unit by selecting *Rename IP Hardware* from the menu.

  - ***Description*:** (Optional) A description or other information about the hardware unit. The description will, among other places, appear when you pause your mouse pointer over the hardware unit in the overview pane. Example:



  - ***Hardware URL*:** URL, IP address, or host name of the hardware unit.

  - ***User name*:** User name required to access and use the hardware unit.

  - ***Password*:** Password required to access and use the hardware unit.

  - ***Type*:** Non-editable field indicating the hardware driver used for the hardware unit.

  3. Click *OK*.

- **Enabling / Disabling Hardware**

  Added hardware is by default enabled.

  Under the required recording server in the overview pane, enabled/disabled hardware units are indicated the following way:

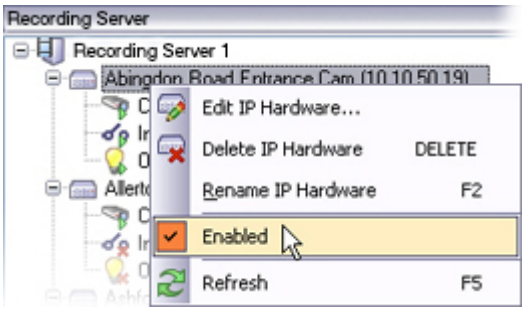
  Enabled
  Disabled

Disabling

To disable added hardware, for example for licensing or performance purposes, do the following:

1. Under the required recording server in the overview pane, and right-click the required hardware unit.

2. In the menu that appears, clear the *Enabled* selection:



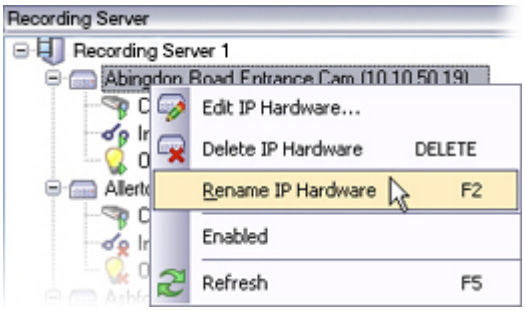
Enabling

To enable a previously disabled hardware unit, select *Enabled* again.

- **Renaming Hardware**

1. Under the required recording server in the overview pane, right-click the required hardware unit.

2. From the menu that appears, select *Rename IP Hardware*:



   Tip: As an alternative to using the menu, press F2 on your keyboard.

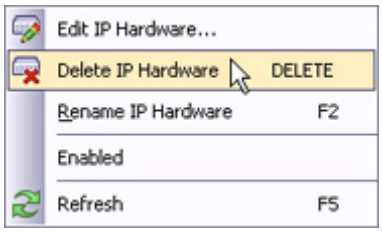
3. You are now able to overwrite the name of the hardware.

- ## Deleting Individual Hardware

IMPORTANT: When deleting a hardware unit, all recordings from the hardware unit in question will be deleted permanently.

1. Under the relevant recording server in the overview pane, right-click the no longer required hardware unit.

2. From the menu that appears, select *Delete IP Hardware*:



Tip: As an alternative to using the menu, press DELETE on your keyboard.

3. You will be asked to confirm that you want to delete the hardware unit. If you are sure, click the *Yes* button.

4. The hardware unit will be removed from the recording server's listings in the Management Client.

If you ever need to add the hardware unit to a recording server again, select the required recording server and use the Hardware Detection Wizard.

- ## Deleting All Hardware on a Recording Server

To delete **all** hardware on a recording server, do the following:

IMPORTANT: When deleting hardware units, all recordings from the hardware units in question will be deleted permanently.

1. In the Management Client's navigation pane expand the *Servers* folder, select the *Recording Servers* node, then in the overview pane right-click the required recording server and select *Delete All Hardware...*

   In order to prevent accidental deletion of hardware, you will be asked to confirm that you wish to delete all hardware on the selected recording server.

2. Verify that you have selected the correct recording server, then click *Yes*.

- ## Enabling / Disabling Individual Devices

Cameras are by default enabled.

Microphones, ***speakers***, ***inputs*** and ***outputs*** are by default disabled. This means that microphones, speakers, inputs and outputs must be individually enabled before they can be used on the NetEVS system. The simple reason for this is that surveillance systems inherently rely on cameras, whereas the use of microphones, etc. is highly individual depending on organizations' needs.

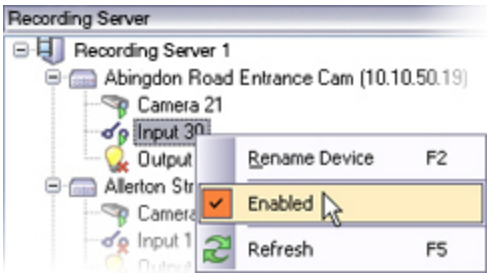
Under the required recording server in the overview pane, enabled/disabled devices are indicated the following way (examples show indications for an output):

Disabled
Enabled

The same method for enabling/disabling is used for cameras, microphones, speakers, inputs, and outputs.

Enabling

1. Under the required recording server in the overview pane, right-click the required camera, input, or output.
2. From the menu that appears, select *Enabled*:

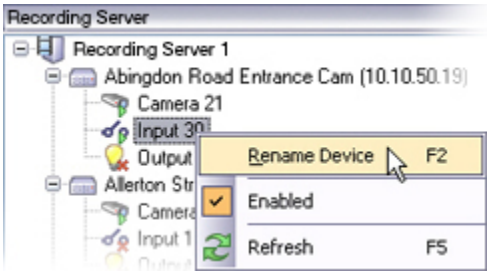


Disabling

To disable a device, for example for licensing or performance purposes, clear the *Enabled* selection in the menu.

- ### Renaming Individual Devices

1. Under the required recording server in the overview pane, right-click the required device.
2. From the menu that appears, select *Rename IP Hardware*:



Tip: As an alternative to using the menu, press F2 on your keyboard.

3. You are now able to overwrite the name of the selected device.

Tip: For information about activating, renaming, or removing a recording server, see Managing Recording Servers.

Hardware Properties

The *Info* tab displays information about the hardware selected under a recording server.

- **Info Tab's Fields**
  - ***Name*:** Name of the hardware. The name will be used whenever the hardware is listed in NetEVS and remote access clients. A name is not compulsory, but highly recommended. The name does not have to be unique. To change the name, overwrite the existing name and click the *Save* button in the Management Client's toolbar.

    Tip: If you change the name, it will be updated throughout NetEVS. This means that if the name is used in, for example, a rule, the name will automatically change in the rule as well.

  - ***Description*:** Description of the hardware. The description will appear in a number of listings within NetEVS. For example, the description will appear when pausing the mouse pointer over the hardware device's name in the overview pane. A description is not compulsory. To specify a description, type the description and click the *Save* button in the Management Client's toolbar.

  - ***Serial Number*:** Serial number of the hardware, as specified by the manufacturer. The serial number is often, but not always, identical to the MAC address.

  - ***Firmware version*:** Firmware version, as specified by the manufacturer.

  - ***MAC address*:** MAC address of the hardware. A MAC (Media Access Control) address is a 12-character hexadecimal number uniquely identifying each device on a network.

  - ***ProductID*:** Product identifier.

  - ***Hardware host name:*** Host name or IP address of the hardware.

    Tip: By clicking the button next to the field, you are able to connect to the hardware's own configuration page. The page opens in a separate window.

The *Settings* tab lets you verify or edit settings for the hardware selected under a recording server:

Selecting hardware under a recording server

Note: The content of the *Settings* tab is determined entirely by hardware in question, and may thus vary depending on the type of hardware selected. For some types of hardware, the settings tab may display no content at all.

The content of the *Settings* tab is displayed in a table, in which the first column lists the available settings, and the second column lists the value of each setting.

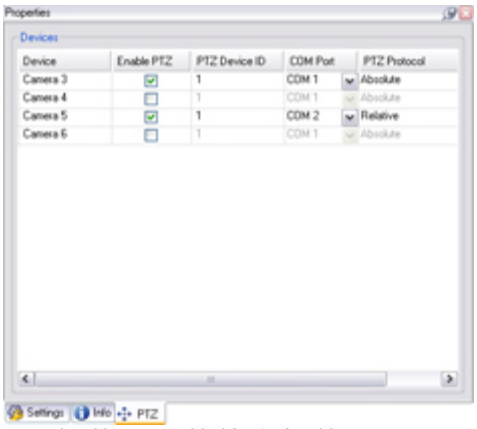
You are typically able to change values; when you have changed a setting to a non-default value, the value will appear in **bold**. When a value must be within a certain range, for example between 0 and 15, the allowed range will be displayed in the information box below the settings table.
The PTZ tab is only available if the selected hardware is a video encoder.

What is a video encoder? A video encoder, also known as video server, is a piece of hardware which is able to stream video from a number of connected cameras. Video encoders contain image digitizers, making it possible to connect analog cameras to a network.

For video encoders, the use of PTZ (Pan/Tilt/Zoom) must be enabled on the hardware level before you can use the PTZ features of PTZ cameras attached to the video encoder. The *Settings* tab lets you enable the use of PTZ separately for each of the video encoder's channels.

To access the *PTZ* tab, select the required hardware in the overview pane, then select the *PTZ* tab in the properties pane.

Note: Not all video encoders support the use of PTZ cameras. Even video encoders which support the use of PTZ cameras may require configuration, such as installation of additional drivers (typically through accessing a browser-based configuration interface on the device's IP address) before PTZ cameras can be used.



PTZ tab, with PTZ enabled for 2 of a video encoder's channels

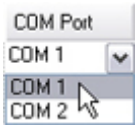
- ## Enabling PTZ on a Video Encoder

  To enable the use of PTZ cameras on a video encoder, do the following on the *PTZ* tab:

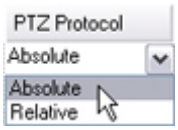
  1. In the list of devices connected to the video encoder, select the *Enable PTZ* box for the camera(s) on which you want to use PTZ:

  2. In the *PTZ Device ID* column, verify the ID of the PTZ camera(s) in question.

  3. In the *COM Port* column, select which of the video encoder's COM (serial communications) ports should be used for controlling PTZ functionality on each required PTZ camera:



4. In the *PTZ Protocol* column, select which positioning scheme to use for each required PTZ camera:



   - ***Absolute*:** When operators use Pan/Tilt/Zoom controls for the camera, the camera is adjusted relative to a fixed position, often referred to as the camera's home position
   - ***Relative*:** When operators use Pan/Tilt/Zoom controls for the camera, the camera is adjusted relative to its current position

   Refer to the camera's documentation if in doubt.

5. Save your changes by clicking the *Save* button in the Management Client's toolbar.

   You are now able to configure preset positions and patrolling for the PTZ camera(s) in question.

- ## Disabling PTZ on a Video Encoder

To disable the use of PTZ cameras on a video encoder, do the following on the *PTZ* tab:

1. In the list of devices connected to the video encoder, clear the *Enable PTZ* box for the camera(s) on which you no longer want to use PTZ:

2. Save your changes by clicking the *Save* button in the Management Client's toolbar.

Archiving

Archiving is the automatic transfer of recordings from a camera's default database to another location. The amount of recordings you are able to store is not be limited by the size of the camera's default database. Archiving also makes it possible to back up your recordings on backup media of your choice.

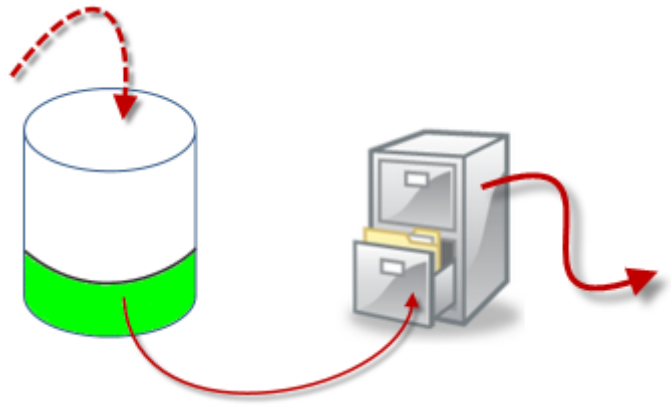
Archiving is configured on a per-recording server basis. Once you have configured the archiving settings for a recording server (where to store archives, how often to transfer recordings to the archives, etc.), you can enable archiving for individual cameras. When archiving is enabled for a camera, the contents of the camera's database will automatically be moved to an archive at regular intervals.

Depending on your requirements, you are able to configure one or more archives for each of your recording servers. Archives can be located either on the recording server computer itself, or at another location which can be reached by NetEVS, for example on a network drive.

Effective archiving is set up adjusting six interdependent settings:

- *Save recorded data in the specified time period*, which is located in the *Maximum storage limits* group on the individual device's *Record* tab.
- *Save recorded data until the specified size is reached*, which is located in the *Maximum storage limits* group on the individual device's *Record* tab.
- *Database Retention (hours)*, which is located on the fourth page of the archive wizard, when the archive wizard is opened from the recording server's *Archiving* tab.
- *Archive Retention (days)*, which is located on the fourth page of the archive wizard, when the archive wizard is opened from the recording server's *Archiving* tab.
- *Archive Retention (GB)*, which is located on the fourth page of the archive wizard, when the archive wizard is opened from the recording server's *Archiving* tab.
- The archiving schedule itself, which is located on the fifth page of the archive wizard, when the archive wizard is opened from the recording server's *Archiving* tab.

The *Maximum storage limits* define the size of the camera's database, exemplified by the cylinder in the following:



Recordings' way from database to archive to deletion

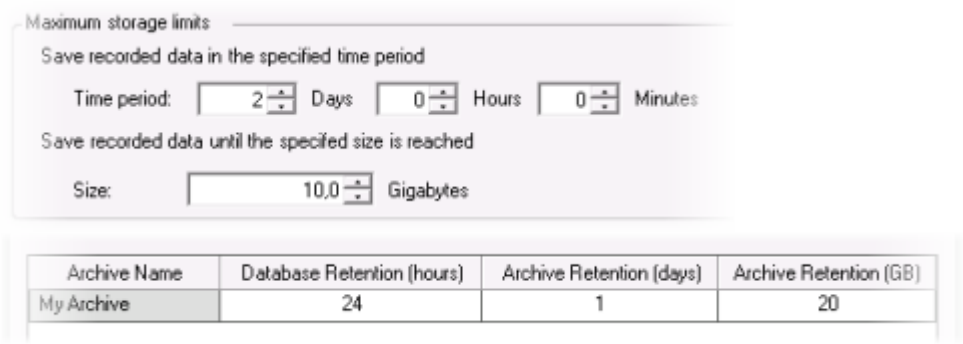
By means of the *Database Retention (hours)* setting, illustrated by the white area in the cylinder, you define how old recordings must be before they are archived. In our illustrated example, recordings are archived

when they have "sifted" down into the green area of the database cylinder, or in other words: when they are old enough to be archived.

The settings *Archive Retention (days) and Archive Retention (GB)* define how long the recordings remain in the archive; recordings remain in the archive for the time specified, or until the archive has reached the specified size limit. When these settings are met, NetEVS begins to overwrite the old recordings in the archive.

The archiving schedule—which is set up in the archive wizard—defines how often and at what times archiving takes place.

These six parameters must be set up in accordance with each other to have recordings archived. The time period specified in *Save recorded data in the specified time period* must be larger than the time period stated in *Database Retention (hours)* **plus** the time interval stated in the archiving schedule.



The time periods stated in *Save recorded data in the specified time period* must be larger than the time period stated in *Database Retention (hours)* **plus** the time interval stated in the archiving schedule.

- ### Configuring and Managing Archiving for a Recording Server

  You configure and manage a recording server's archiving settings through the Archive Wizard, available from the recording server's Archiving Tab. The wizard takes you through the steps required in order to:

  - Create new archives for the recording server
  - Change existing archives
  - Remove archives

- ### Default Archive

  For each recording server, you are able to create one or more archives.

  For recording servers with more than one archive, the default archive is the archive directory to which archiving will take place if use of another of the recording server's archive directories has not deliberately been specified for certain cameras. Only one archive directory can be the recording server's default archive.

  - If you create more than one archive for a recording server, you must thus select which of the archives should be the recording server's default archive. You do this through the Archive Wizard.
  - If you only create one archive for a recording server, the archive will automatically be the recording server's default archive.

- ### Enabling and Configuring Archiving for Individual Devices

  Once archiving has been configured for a recording server, you can enable archiving for individual cameras, microphones or speakers. You are also able to select which of a recording server's archives should be used for the individual device. Note that archiving is set up by adjusting six interdependent settings as described previously.

  1. In the navigation pane, expand *Devices*, and select either *Cameras*, *Microphones* or *Speakers* as required.
  2. In the overview pane, select the required device.
  3. In the properties pane, select the *Archiving* tab.

- ### Viewing Archived Recordings

  You can view archived recordings in the Ocularis Client or Ocularis Client Lite. As long as the archived recordings are stored locally or on accessible network drives, you can use the Ocularis Client/Ocularis Client Lite's many features (timeline browser, search, evidence export, etc.) when browsing archived recordings; just like you would with recordings stored in a cameras' regular databases. The fact that you are viewing archived recordings will be completely transparent.

  Note: Remember that individual user rights may prevent particular users from viewing recordings from particular cameras—just as is the case when browsing recordings from cameras' regular databases.

- ### Backing Up Archived Recordings

  Many organizations want to back up their recordings, using tape drives or similar. Exactly how you do this is highly individual, depending on the backup media used in your organization. However, the following is worth keeping in mind:

  ## Back Up Archives Rather than Camera Databases

  Always create backups based on the content of archives, not based on individual camera databases. Creating backups based on the content of individual camera databases may cause sharing violations or other malfunctions.

  When scheduling a backup, make sure the backup job does not overlap with your specified archiving times.

  Tip: You are able to view each recording server's archiving schedule, as well as the time of the next scheduled archiving in each of a recording server's archives, on the Archiving Tab.

  ## Knowing Archive Structure Lets You Target Backups

  When recordings are archived, they are stored in a certain sub-directory structure within the archive.

  During regular use of your NetEVS system, the sub-directory structure will be completely transparent to the system's users, as they browse all recordings with the Ocularis Client or Ocularis Client Lite regardless of whether the recordings are archived or not. Knowing the sub-directory structure is thus primarily interesting if you want to back up your archived recordings. See *Archive Structure* below for more information.

Viewing Backed-Up Archives

If you need to view your backed-up recordings, you cannot view them directly from the backup media.

Instead, copy the backed-up archiving directories into their original place in your NetEVS system's archiving directory structure. You will able to use all of the Ocularis Client/Ocularis Client Lite's features (timeline browser, search, evidence export, etc.) when browsing the recordings.

- ### Archive Structure

When recordings are archived, they are stored in a specific sub-directory structure within the archive.

Note: During regular use of your NetEVS system, the sub-directory structure will be completely transparent to the system's users, as they browse all recordings with the Ocularis Client/Ocularis Client Lite regardless of whether the recordings are archived or not. Knowing the sub-directory structure is thus primarily interesting if you want to back up your archived recordings.

In each of the recording server's archive directories, separate sub-directories are automatically created. These sub-directories are named after the GUID of the recording server.

What is a GUID? A GUID is a Globally Unique IDentifier; a unique 128-bit number used to identify components on a Windows system. Example of a GUID: 469c37e4-28ad-487b-bcb7-e5fd7e5a609a.

Since you are able to able to store recordings from different cameras in the same archive, and since archiving for each camera is likely to be performed at regular intervals, further sub-directories are also automatically added.

These sub-directories each represent approximately an hour's worth of recordings. The one-hour split makes it possible to remove only relatively small parts of an archive's data if the maximum allowed size of the archive is reached.

The sub-directories are named after the GUID of each camera *plus* the date and time of the most recent database record contained in the sub-directory.

Naming structure:

```
...[Archive Name]\[Recording Server GUID]\[Camera GUID plus date and
time of most recent recording]\
```

Real life example:

```
...OurArchive\b82e691f-67cf-4177-a0b9-e69077d4d75a\469c37e4-28ad-
487b-bcb7-e5fd7e5a609a_2007-04-30_14-30-20\
```

In the example, the latest recording contained in the sub-directory is from 20 seconds past half past 2 in the afternoon on April 30th 2007.

Even further sub-directories are automatically added. The amount and nature of these sub-directories depend on the nature of the actual recordings. For example, several different such sub-directories will be added if the recordings are technically divided into sequences; something which is often the case if motion detection has been used to trigger recordings.

If you want to back up your archives, knowing the basics of the sub-directory structure enables you to target your backups. Examples:

- If wishing to back up the content of an entire archive, back up the required archive directory and all of its content; for example everything under:

  ```
  ...OurArchive\
  ```

- If wishing to only back up the recordings from a particular camera from a particular period of time, back up the contents of the relevant sub-directories only; for example everything under:

  ```
  ...OurArchive\b82e691f-67cf-4177-a0b9-e69077d4d75a\469c37e4-28ad-487b-bcb7-e5fd7e5a609a_2007-04-30_14-30-20\
  ```

- ### Archiving and Virus Scanning

  If you are using virus scanning software on the computer on which the camera databases you want to archive are located, or on a computer to which data is archived, it is likely that the virus scanning will use a considerable amount of system resources on scanning all the data which is being archived.

  This may affect system performance negatively. Also, virus scanning software may temporarily lock each file it scans, which may further impact system performance negatively.

  If possible, you should therefore disable any virus scanning of camera databases and archiving locations.

- ### Frequently Asked Questions about Archiving

  How do I Ensure that Archiving is Set up Correctly?
  Archives are set up by adjusting the six interdependent parameters correctly as described previously.

  Can I Create an Archive on a Network Drive?
  Archives can be located either on the recording server computer itself, or at another location which can be reached by NetEVS, for example on a network drive.

  What Happens when the Maximum Size of an Archive is Reached?
  When you create archives through the *Archive Wizard*, you specify a maximum size limit for the archive, in days and gigabytes. When either of the two maximum limits is reached, recordings in excess of the specified number of days/gigabytes will be removed. However, in order not to remove more recordings than necessary, excess recordings will be removed in chunks of approximately one hour's worth of recordings.

  What Happens if a Scheduled Archiving Fails?
  If a scheduled archiving fails, for example because the archive is located on a network drive which is temporarily unavailable, NetEVS will retry archiving after an hour. If that fails, another retry will take place after yet another hour, and so forth.

  If the time of the next scheduled archiving is reached between 2 retries, an archiving attempt will be made at the scheduled time; if that attempt fails, NetEVS will retry archiving after an hour, and so forth.

  How Long Does it Take to Complete a Scheduled Archiving?
  Archiving of data will never take longer than twice the amount of time it took to record the data, and never longer than 120 minutes.

  The time it takes for NetEVS to complete an archiving job is determined by several factors. The amount of data to be archived is obviously an important factor. However, like all other system processes, archiving also ties up system resources. If NetEVS were to archive everything as

quickly as possible, a disproportional amount of system resources might be tied up by the archiving.

Therefore, NetEVS uses a number of parameters to determine the ideal amount of resources to spend on each archiving job, and thus the amount of time it will take to complete each scheduled archiving. These parameters include, but are not limited to:

- When the next archiving is scheduled for
- A minimum number of kilobytes to archive per second
- A compulsory period of archiving-free time inserted after each finished archiving job to ensure that archiving jobs do not overlap in time
- Whether the maximum size limit of the archive is about to be reached, and consequently if any existing data needs to be removed before the new data can be archived

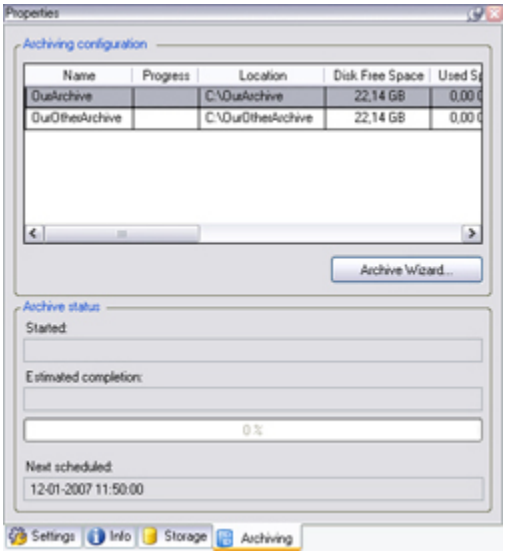
What Happens if Archiving Is Not Finished before the Next Scheduled Archiving?
NetEVS system inserts a compulsory period of archiving-free time after each finished archiving job. This ensures that archiving jobs do not overlap in time. See also the answer to the previous question *How long does it take to complete a scheduled archiving?*

You are able to view and manage the archiving settings of a selected recording server on the *Archiving* tab. Management of the recording server's archiving settings takes place through the Archive Wizard, which you can access from the *Archiving* tab. Note that archiving is set up by adjusting six interdependent parameters correctly, as described in About Archiving.

What is archiving? Archiving is the automatic transfer of recordings from a camera's default database to another location. This way, the amount of recordings you are able to store will not be limited by the size of the camera's default database. Archiving also makes it possible to back up your recordings on backup media of your choice. See About Archiving for more information.

To access the *Archiving* tab, select the required recording server in the overview pane, then select the *Archiving* tab in the properties pane.

Note: Another tab called *Archiving* will be displayed if you view the properties of an individual camera; this is where you enable/disable archiving for the camera in question. For more information, see *Archiving* tab (Camera Properties).



- ### Archiving Tab's List of Archives

  Each archive you have added through the Archive Wizard will be listed with the following information:

  - ***Name*:** Name of the archive.
  - ***Progress*:** Displays the percentage of completion for any ongoing archiving process. If archiving is not ongoing, no information is displayed.
  - ***Location*:** Path to the archive directory.
  - ***Disk Free Space*:** Free space left on the disk on which the archive is located; *not* free space left in the archive itself.
  - ***Used Space*:** Space used in the archive.
  - ***Default*:** Checked box indicates which archive is the recording server's default archive.
  - ***Schedule*:** Archiving schedule (i.e. how often archiving should take place).

  Tip: You may have to use the tab's horizontal scroll bar to view all columns in the list.

- ### Accessing the Archive Wizard

  To access the Archive Wizard from the *Archiving* tab, click the tab's *Archive Wizard...* button.

- ### Monitoring Archives' Status

  The lower part of the *Archiving* tab displays status information about the archive you have selected in the list in the upper part of the tab:

  - ***Started*:** Displays the start date and time of any ongoing archiving process. If archiving is not ongoing, no information is displayed.
  - ***Estimated completion*:** Displays an estimated completion time for any ongoing archiving process. If archiving is not ongoing, no information is displayed. While archiving is ongoing, a bar displays the percentage of completion.
  - ***Next scheduled*:** Displays the date and time of the next scheduled archiving.

The *Database Archiving Configuration Wizard*—normally just referred to as the *Archive Wizard*—helps you create archives and manage a recording server's archiving settings.

What is an archive? An archive is a directory to which recordings from selected cameras will be moved at scheduled intervals, thus enabling you to store recordings in excess of what is possible in cameras' default databases. For more detailed information, see About Archiving.

To access the wizard, select the required recording server in the overview pane, select the *Archiving* tab in the properties pane, then click the *Archive Wizard...* button.

Note: The following describes the *Archive Wizard* as it appears when accessed while working with a recording server's archiving settings. A different version of the wizard is available when working with a camera's archiving settings.

- ## Creating New Archives for a Recording Server

1. On the first step of the *Archive Wizard*, select *Create new archive on recording server* and click *Next*.

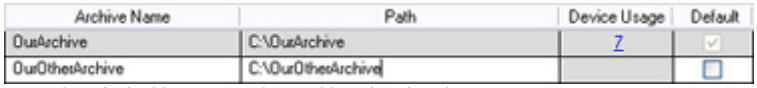
2. On the second step of the wizard, specify the following:

   - ***Archive Name*:** Type a descriptive name for the archive.

   - ***Path*:** Type the path to the directory in which you will store the archive. The archive does not necessarily have to be on the recording server computer itself.

     Tip: The archive directory you specify does not have to be an existing one; if the directory does not exist, it will automatically be created.

   - ***Default*:** Select whether the archive should be the recording server's default archive, i.e. the archive to which archiving will take place if no other archive has deliberately been specified for certain cameras. Only one archive can be the default archive.



Example only; in this case another archive already exists

Tip: The *Device Usage* column will initially be empty for the archive you are adding. Later, when you have specified which cameras should use the archive, the number in the *Device Usage* column will change accordingly. Then, by clicking the number, you will be able to see exactly which cameras are using a given archive.

Click *Next*.

3. On the third step of the wizard, specify the following:

   - ***Database Retention (hours)*:** Select the number of hours for which recordings should remain in cameras' databases before they can be archived. This is useful if you do not want your most recent recordings to be archived straight away even though archiving may be scheduled to take place before the specified number of hours.

     Who determines the schedule? You do. On the wizard's next step you are going to specify the intervals with which the archiving process will be started.

     Example: If you specify 24 hours, recordings must be at least a day old before they will be archived. If archiving is scheduled to take place before the 24 hours have passed, only recordings older than 24 hours will be archived.

     Remember that the archive's scheduling may mean that recordings will be older than the specified number of hours before they are archived. This may especially be the case if you specify an archiving schedule with long time spans between archiving.

     Note: Archiving is set up by adjusting correctly six interdependent settings, of which four are included in the recording server archive wizard. The other two parameters are set on the individual device. See About Archiving for more information.

- ***Archive Retention (days)*:** Select the maximum number of days of recordings to store in the archive.

  Example: If you specify 20 days, this will mean that recordings from a total of 20 days will be stored in the archive; *not* necessarily that recordings from the last 20 calendar days before the current point in time will be stored. This is important, since—depending on recording settings—some days may not yield any recordings at all.

  Old recordings from days in excess of the specified number will be removed from the archive.

  IMPORTANT: Note that this is one of 2 maximum size settings for the archive. The *Archive Retention (GB)* setting, specified in the neighboring field, may mean that recordings are removed from the archive before the specified number of days is reached.

  Tip: If you want to specify *indefinitely*, select a value of 0 (zero).

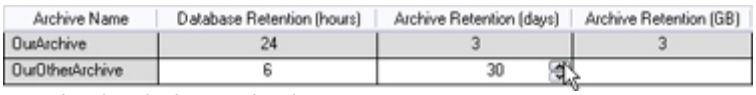
- ***Archive Retention (GB)*:** Select the maximum number of gigabytes of recording data to store in the archive.

  Example: If you want to store up to 100 gigabytes of recording data in the archive, select 100.

  Recording data in excess of the specified number of gigabytes will be removed from the archive.

  IMPORTANT: Note that this is one of 2 maximum size settings for the archive. The *Archive Retention (days)* setting, specified in the neighboring field, may mean that recordings are removed from the archive before the specified number of gigabytes is reached.

  IMPORTANT: An archive always requires 50 megabytes of free space; the actual maximum size of your archive will thus be the amount of gigabytes you specify *minus* 50 megabytes.



Archive Name	Database Retention (hours)	Archive Retention (days)	Archive Retention (GB)
OurArchive	24	3	3
OurOtherArchive	6	30	

Example only; selecting retention sizes

Click *Next*.

4. On the fourth step of the wizard, specify an archiving schedule, i.e. the intervals with which the archiving process will be started.

   You have a large amount of flexibility. If required, you are able to make archiving take place very frequently indeed (in principle every minute all year round), or very infrequently (for example every first Monday of every 36 months).

   What is the ideal interval? The ideal interval to use between each archiving process depends entirely upon your organization's needs. Consider your system's recording settings, make an estimate of the amount of data you expect to record within, for example, a day, a week, or a month, then decide on a suitable interval. Keep in mind that your organization's needs may change over time; it is thus a good idea to regularly monitor your archiving settings, and adjust them if required.

Tip: The effect of your selections are summed up in the lower part of the wizard; use the summary to verify that your selections reflect your intentions.

Tip: If required, you can always adjust the archive's settings—including its scheduling—once the archive has been created.

Click *Next*.

5. Your new archive will be created. A progress bar will indicate how creation progresses. When the archive is created, the wizard will display a confirmation:

If the archive could not be created, the wizard will display a link to detailed information about what caused the problem:

Click *Finish*. Our newly created archive will be listed on the *Archiving* tab for the recording server.

Tip: On the *Archiving* tab, you will also be able to see useful information about each archive created on the recording server, for example when the next archiving is scheduled to take place.

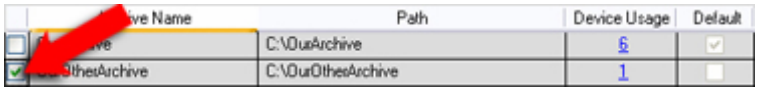
- ## Changing Existing Archives

Note: Although you can change a number of settings, you cannot change the *path* of an existing archive. If you want to re-locate an archive, you must first remove the archive from the recording server, then create the archive from scratch at the required new location.

Note: Archiving is set up by adjusting six interdependent settings, of which four are included in the recording server archive wizard. See About Archiving for more information.

1. On the first step of the *Archive Wizard*, select *Change existing archive on recording server* and click *Next*.

2. Select the archive you want to change. Select the check box next to the name of the required archive:



You can only select a single archive at a time.

Click *Next*.

3. Now you are able to change the following:

   - ***Archive Name*:** You are able to overwrite the archive name with a new name.

   - ***Default*:** You are able to select that the archive should be the recording server's default archive, i.e. the archive to which archiving will take place if no other archive has deliberately been specified for certain cameras. Only one archive

can be the default archive.

Click *Next*.

4. Now you are able to change the following:

   - ***Database Retention (hours)*:** The number of hours for which recordings should remain in cameras' databases before they can be archived.

   - ***Archive Retention (days)*:** Select the maximum number of days for which recordings should be stored in the archive.

     IMPORTANT: Note that this is one of 2 maximum size settings for the archive. The *Archive Retention (GB)* setting, specified in the neighboring field, may mean that recordings are removed from the archive before the specified number of days is reached.

     Tip: If you want to specify *indefinitely*, select a value of 0 (zero).

   - ***Archive Retention (GB)*:** Select the maximum number of gigabytes of recording data to store in the archive.

     IMPORTANT: Note that this is one of 2 maximum size settings for the archive. The *Archive Retention (days)* setting, specified in the neighboring field, may mean that recordings are removed from the archive before the specified number of gigabytes is reached.

     IMPORTANT: An archive always requires 50 megabytes of free space; the actual maximum size of your archive will thus be the amount of gigabytes you specify *minus* 50 megabytes.

   Click *Next*.

5. Now you are able to change the archiving schedule.

   Click *Next*.

6. Your changes will be implemented. A progress bar will indicate how implementation progresses. When the archive is changed, the wizard will display a confirmation. If the archive could not be changed, the wizard will display a link to detailed information about what caused the problem.

   Click *Finish*.

- ## Removing Archives

Note: You are only able to remove archives if at least 2 archives exist. If only a single archive exists, it cannot be removed as it will automatically be the recording server's default archive.

1. On the first step of the *Archive Wizard*, select *Remove archive on recording server* and click *Next*.

2. Select the check box next to the name of the archive you want to remove:

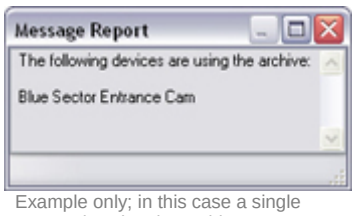
Note that you cannot remove an archive if use of the archive has been specified for one or more cameras, or if the archive is the recording server's default archive.

- ### What to Do if the Archive Is In Use

  The number of cameras using the archive will be displayed in the *Device Usage* column:

  The number must be zero before you can remove the archive. To select another archive for the cameras, or disable archiving for the cameras, do the following:

  a. Click the number in the *Device Usage* column to see which cameras are using the archive:

  Example only; in this case a single camera is using the archive

  b. Leave the Archive Wizard by clicking *Cancel*.

  c. Go to the *Archiving* tab for each camera (by selecting the required camera in the overview pane, then select the *Archiving* tab in the properties pane), and either select another archive for the camera or disable archiving for the camera.

  d. Start the *Archive Wizard* again, and repeat steps 1-2.

- ### What to Do if the Archive is the Default Archive

  If the archive you are trying to remove is the recording server's default archive, it will be indicated by a check mark in the *Default* column.

  If there is only one archive on the recording server, the archive will automatically be the recording server's default archive, and you will not be able to remove it.

  If there are other archives on the recording server, you can specify that another archive should be the recording server's default archive:

  a. Click the *Back* button to go to the first step of the wizard.

  b. On the wizard's first step, select *Change existing archive on recording server*, and click *Next*.

  c. On the wizard's second step, select the archive you want to make the recording server's default archive, and click *Next*.

  d. On the wizard's third step, select the *Default* box next to the archive you want to make the recording server's default archive, then click *Next*.

e. Verify that retention times are as required. Click *Next*.

f. Verify that scheduling is as required. Click *Next*.

g. When the archives have been updated, click *Finish*.

h. Start the Archive Wizard again, and continue removing the no longer required archive.

Click *Next*.

3. Since removing the archive will also remove all of its content, you will be asked to confirm that you want to remove the archive. If you are sure, click *Yes*.

4. The selected archive will be removed. A progress bar will indicate how removal progresses.

   When the archive has been removed, the wizard will display a confirmation. If the archive could not be removed, the wizard will display a link to detailed information about what caused the problem.

5. Click *Finish*.

Registered Services

Occasionally, you have servers and/or services which should be able to communicate with NetEVS even though they are not directly part of the NetEVS surveillance system.

Some services, but not all, can register themselves automatically in NetEVS. An example of this would be a Log Service.

Automatically registered services are displayed in the list of registered services.

You can manually specify servers/services as registered services in the Management Client:

- **Accessing Registered Services Configuration**

  1. In the Management Client's menu bar, select *Tools* > *Registered Services...*

  2. The *Add/Remove Registered Services* window opens. From this window you can manage registered services.

- **Adding Registered Services**

  1. In the *Add/Remove Registered Services* window, click the *Add...* button.

  2. In the *Add Registered Service* window, specify the following:

     - ***Service type*:** Pre-filled field.

     - ***Name*:** Name of the registered service; the name is only used for display purposes in the Management Client.

     - ***Description*:** Description of the registered service; the description is only used for display purposes in the Management Client.

     - ***URLs*:** Click the *Add* button to add the IP address or hostname of the registered service in question. If specifying a hostname as part of a URL, the host in

question must exist and be available on the network. URLs must begin with *http://* or *https://* and must not contain any of the following characters: < > & ' " * ? | [ ] "

Example of a typical URL format: http://ipaddress:port/directory (where port and directory are optional).

Note that you can add more than one URL if required.

- ***External*:** Select if the registered service connects to the Management Server with a public IP address.
- ***Trusted*:** Select if the registered service should be trusted immediately (this is often the case, but the option gives you the flexibility to add the registered service and then mark it as trusted by editing the registered service later).

  Note that changing the trusted state will also change the state of other registered services sharing one or more of the URLs defined for the registered service in question.

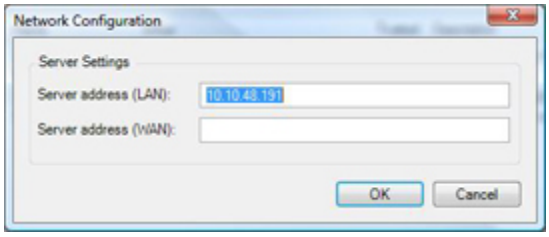
3. Click *OK*.

   If more registered services are required, repeat steps 1-3.

- ## Network Configuration

With the network configuration settings you specify the NetEVS Management Server's server LAN and WAN addresses in order for the NetEVS Management Server and the trusted servers to be able to communicate.

1. In the *Add/Remove Registered Services* window, click *Network...*
2. Specify the LAN and/or WAN IP address of the NetEVS Management Server. If all involved servers (both the NetEVS Management Server and the trusted servers) are on your local network, you can simply specify the LAN address. If one or more involved servers access the system through an internet connection, you must also specify the WAN address.



3. Click *OK*.

- ## Editing Registered Service Information

1. In the *Add/Remove Registered Services* window's *Server list*, select the required service, then click the *Edit...* button.
2. In the *Edit Registered Service* window, make the required changes.

   If specifying a hostname as part of a URL, the host in question must exist and be available on the network. URLs must begin with *http://* or *https://* and must not contain any of the following characters: < > & ' " * ? | [ ] "

If changing the trusted state, note that changing the trusted state will also change the state of other registered services sharing one or more of the URLs defined for the registered service in question.

3. Click *OK*.

- **Removing Registered Services**
  1. In the *Add/Remove Registered Services* window's *Service list*, select the no longer required service, then click the *Remove...* button.
  2. You will be asked to confirm that you want to remove the selected service. If you are sure, click the *Yes* button.

Roles (Users & Rights)

Roles

Roles determine which of your NetEVS solution's features users and groups are able to use. In other words, roles determine rights.

You define roles first, then you add users/groups to the roles.

One role is predefined in NetEVS, and cannot be deleted: the *Administrators* role. In addition to the *Administrators* role, you are able to add as many roles as required in your organization.

To manage roles in NetEVS, expand the *Security* folder in the Management Client's navigation pane, and select *Roles*.

For more information see:
- Administrators Role
- Adding a Role
- Assigning Users and Groups to a Role
- Specifying the Rights of a Role
- Renaming a Role
- Deleting a Role
- Viewing Effective Roles.

Note that roles may also determine access to views in access clients; see Managing View Groups.
The *Administrators* role is predefined, and cannot be deleted. Users and groups with the *Administrators* role have complete and unrestricted access to the entire NetEVS system. For this reason it is not necessary to specify role settings for the *Administrators* role.

Role settings tabs are not available for *Administrators* role as users and groups with this role have unrestricted access to the system

You add users and groups to the *Administrators* role just as with any other role; see Assigning Users & Groups to a Role.

IMPORTANT: Users with *local machine administrator* rights on the computer running the Management Server will automatically have administrator rights on the Management Server. It is therefore important that you verify which users have *local machine administrator* rights on the computer running the Management Server: Only users whom you trust as administrators of your NetEVS system should have *local machine administrator* rights on the computer running the Management Server.

Managing Roles

- ### Added Roles Become View Groups

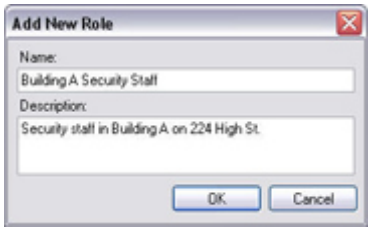
  By default, each role you define is also created as a view group: when you add a role in the Management Client, the role will automatically appear as a view group for use in Ocularis Client Lite. If you use Ocularis Base, view groups are created in the Ocularis Administrator application.

  What is a view group? The way in which video from one or more cameras is presented in the access clients is called a view. A view group is basically a container for one or more such views for use in Ocularis Client Lite. In Ocularis Client Lite, a view group is presented as an expandable folder from which users can select the view they want to see.

  - The view group will only be available to users/groups who have been assigned to the role in question by default. You are able to change this; see *ViewGroup Security Rights* in Specifying the Rights of a Role.
  - The view group will carry the role's name by default. For example: If you create a role with the name *Building A Security Staff*, it will appear in access clients as a view group called *Building A Security Staff*. You are able to change the name, so the view group has another name than the role; see Managing View Groups for more information.
  - You are able to create additional view groups, and to delete view groups which you do not want to use. See Managing View Groups for more information.

- ### How to Add a Role

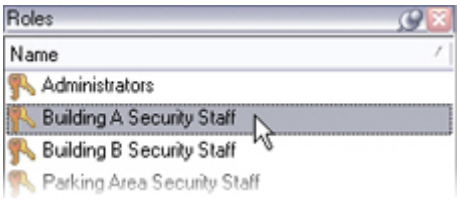
  1. In the Management Client's navigation pane, expand *Security*, and right-click *Roles*.
  2. Select *Add New Role*. This will open the *Add New Role* dialog.
  3. In the *Add New Role* dialog, type a name and description of the new role:

     Then click *OK*.
  4. The new role is added to the *Roles* list in the overview pane. By default, a new role does not have any users/groups or rights associated with it.

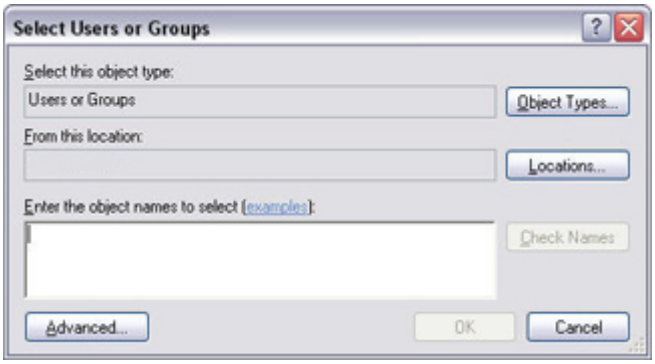
You are now able to assign users/groups to the role, and to specify which of NetEVS's features they should be able to access. See Assigning Users and Groups to a Role and Specifying the Rights of a Role for more information.

1. In the Management Client's navigation pane, expand *Security*, and select *Roles*. Then select the required role in the overview pane:



2. In the properties pane, select the *Users & Groups* tab:

3. On the *Users & Groups* tab, click the *Add...* button. This will open the *Select Users and Groups* dialog:



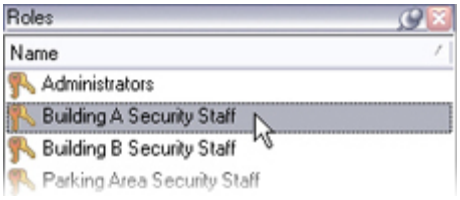
4. In the *Select Users or Groups* window, verify that the required domain is specified in the *From this location* field. If not, click the *Locations...* button to browse for the required domain.

5. In the *Enter the object names to select* box, type the required user names, initials, or other types of identifier which Active Directory will be able to recognize.

   Tip: Typing part of a name is often enough. Use the *Check Names* feature to verify that the names, initials, etc. you have typed are recognized by Active Directory.

6. Click *OK*. The selected users/groups are now added to the *Users & Groups* tab's list of users who have been assigned the selected role.

7. In the Management Client's navigation pane, expand *Security*, and right-click *Roles*. Then select the required role in the overview pane:



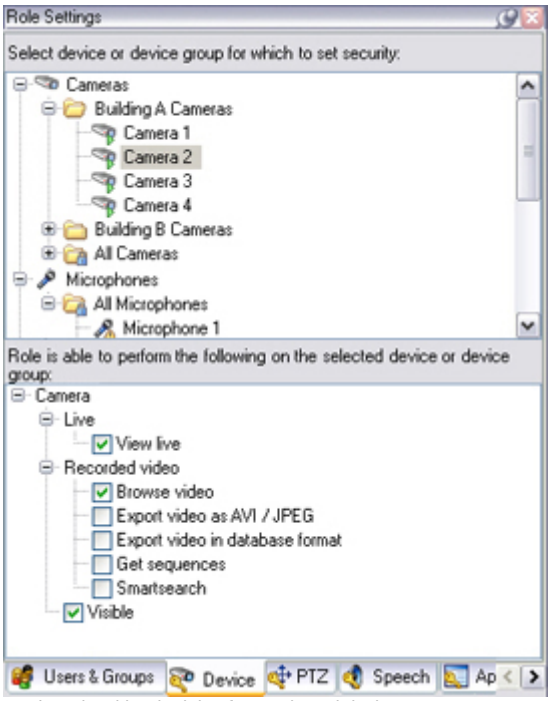
8. In the properties pane, specify required rights for the role on the relevant tabs:

   - **Device Rights**

     The *Device* tab lets you specify which features users/groups with the selected role should be able to use for each device (e.g. a camera) or device group.

The tab is divided into 2 halves: In the upper half you select the device or device group for which you want to specify role rights. In the lower half you then specify which of the selected device's or device group's features users/groups with the selected role should have the right to access.

Remember to repeat for each required device/device group.



Device tab, with role rights for a selected device, in this case a camera. Note that you can also select a device group, and specify role rights for the entire device group in one step.

- **Camera-Related Rights**
  - ***Visible*:** Determines whether the selected camera(s) will be visible in access clients.
  - ***View live*:** Determines whether live viewing of video from the selected camera(s) will be possible in access clients.
  - ***Browse video*:** Determines whether browsing of recorded video from the selected camera(s) will be possible in access clients.
  - ***Export video as AVI/JPEG*:** Determines whether the AVI and JPEG export feature can be used when browsing recorded video from the selected camera(s) in access clients.
  - ***Export video in database format***: Determines whether the database export feature can be used when browsing recorded video from the selected camera(s) in the Ocularis Client Lite.
  - ***Get sequences*:** Determines whether the *Sequences* feature can be used when browsing recorded video from the selected camera(s) in access clients.

- ***Smartsearch*:** Determines whether the *Smart Search* feature can be used when browsing recorded video from the selected camera(s) in Ocularis Client Lite.

Note: The *View live* right also requires that the role has been granted the right to view the access clients' *Live* tab. This right is granted as part of the application rights.

Note: The *Browse video*, *Export video as AVI/JPEG*, *Export video in database forma*, *Get sequences*, and *Smartsearch* rights also require that the role has been granted the right to view the access clients' *Browse* tab. This right is granted as part of the application rights.

- ### Microphone-Related Rights

  - ***Visible*:** Determines whether the selected microphone(s) will be visible in Ocularis Client Lite.
  - ***Listen to live audio*:** Determines whether listening to live audio from the selected microphone(s) will be possible in Ocularis Client Lite.
  - ***Browse audio*:** Determines whether browsing of recorded audio from the selected microphone(s) will be possible in Ocularis Client Lite.
  - ***Export audio*:** Determines whether the export feature can be used when browsing recorded audio from the selected microphone(s) in Ocularis Client Lite.
  - ***Get sequences*:** Determines whether the *Sequences* feature can be used when browsing recorded audio from the selected microphone(s) in Ocularis Client Lite.

- ### Speaker-Related Rights

  - ***Visible*:** Determines whether the selected speaker(s) will be visible in Ocularis Client Lite.
  - ***Listen to live audio*:** Determines whether listening to live audio from the selected speaker(s) will be possible in Ocularis Client Lite.
  - ***Browse audio*:** Determines whether browsing of recorded audio from the selected speaker(s) will be possible in Ocularis Client Lite.
  - ***Export audio*:** Determines whether the export feature can be used when browsing recorded audio from the selected speaker(s) in Ocularis Client Lite.
  - ***Get sequences*:** Determines whether the *Sequences* feature can be used when browsing recorded audio from the selected speaker(s) in Ocularis Client Lite.

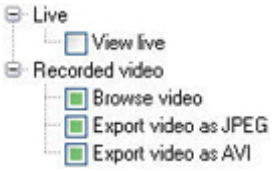
IMPORTANT: Although what is being said through a speaker can be recorded and archived, there is currently no way of playing back or exporting such recorded outgoing audio. Therefore, some of the speaker-related rights currently have no effect. Features for playing back and exporting recorded outgoing audio, etc. will be available in subsequent releases as soon as possible.

- **Input-Related Rights**
  - ***Visible*:** Determines whether information about the selected input(s) will be visible to users of Ocularis Client Lite as well as users of NetCentral, an add-on product for providing complete overview of surveillance system status and alarms.

- **Output-Related Rights**
  - ***Visible*:** Determines whether the selected output(s) will be visible in Ocularis Client Lite. If visible, the output will be selectable on a list in Ocularis Client Lite.
  - ***Activate output*:** Determines whether the selected output(s) can be activated from Ocularis Client Lite.

Note: Outputs are selected and activated on Ocularis Client Lite's *Live* tab. Both rights thus require that the role has been granted the right to view Ocularis Client Lite's *Live* tab; this right is granted as part of the application security rights.

Why are some check boxes filled with squares? Square-filled check boxes can only appear if you are specifying role rights for a device group, in which case they indicate that the right in question currently applies for some, but not all, devices within the device group.



Square-filled check boxes indicate that settings currently apply for some, but not all, devices within a device group

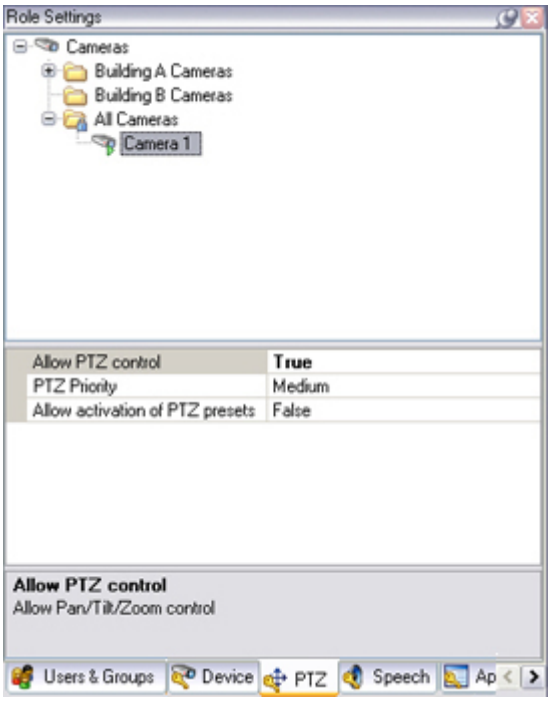
You can still select or clear such square-filled check boxes, but note that your choice will in that case apply for *all* devices within the device group. Alternatively, select the individual devices in the device group to verify exactly which devices the right in question applies for.

- **PTZ Rights**

Relevant only if PTZ (Pan/Tilt/Zoom) cameras are available on your NetEVS system, the *PTZ* tab lets you specify which features users/groups with the selected role should be able to use. The *PTZ* tab is divided into 2 halves:

In the upper half you select the PTZ camera or device group for which you want to specify settings—note that only PTZ cameras and device groups containing PTZ cameras are available for selection.

In the lower half you then specify what users/groups with the selected role should be able to do when operating the selected PTZ cameras in Ocularis Client Lite.



The following rights are available:

- ***Allow PTZ Control*:** Determines whether users/groups with the selected role are able to use the pan, tilt and zoom features of the selected PTZ camera(s).
    - *False*: Users/groups with the selected role will not be able to use the pan, tilt and zoom features of the selected PTZ camera(s)
    - *True*: Users/groups with the selected role will be able to use the pan, tilt and zoom features of the selected PTZ camera(s)
- ***PTZ Priority*:** When several users on a surveillance system wish to control the same PTZ camera at the same time, conflicts may occur. This setting lets you alleviate the problem by specifying a priority for use of the selected PTZ camera(s) by users/groups with the selected role. Specify a priority from *Very low* to *Very high*.

  Example: You specify that the role *Security Manager* should have very high priority when using a PTZ camera, whereas the role *Security Assistant* should have low priority when using the PTZ camera. Now, if a user with the role *Security Manager* and a user with the role *Security Assistant* want to control the PTZ camera at the same time, the user with the role *Security Manager* will win the ability to control the camera.

  Note: Users of Ocularis Client Lite are able to stop/resume a patrolling PTZ camera's patrolling through a context menu in Ocularis Client Lite view. This PTZ feature is not regulated by PTZ priority.
- ***Allow activation of PTZ presets*:** Determines whether users/groups with the selected role are able to move the selected PTZ camera(s) to preset positions.

- *False*: Users/groups with the selected role will not be able to move the selected PTZ camera(s) to preset positions
- *True*: Users/groups with the selected role will be able to move the selected PTZ camera(s) to preset positions

Note: For the rights to work, the role must also be granted the right to view Ocularis Client Lite's *Live* tab. This right is granted as part of the application rights. Furthermore, the PTZ camera(s) must be *visible* in Ocularis Client Lites; you determine as part of the device rights.

- ### Speech Rights

Relevant only if loudspeakers are available on your NetEVS system, the *Speech* tab is divided into 2 halves:

In the upper half you select the speaker or device group for which you want to specify settings. In the lower half you then specify what users/groups with the selected role should be able to do when operating the selected speaker(s) in Ocularis Client Lite.

The following rights are available:

- ***Speak live*:** Determines whether users with the selected role will be able talk through the selected speaker(s).
- ***Speak priority*:** When several Ocularis Client Lite users want to talk through the same speaker at the same time, conflicts may occur. This setting lets you alleviate the problem by specifying a priority for use of the selected speaker(s) by users/groups with the selected role. Specify a priority from *Very low* to *Very high*.

  Example: You specify that the role *Security Manager* should have very high priority when talking through a speaker, whereas the role *Security Assistant* should have low priority when talking through the speaker. Now, if a user with the role *Security Manager* and a user with the role *Security Assistant* want to talk through the speaker at the same time, the user with the role *Security Manager* will win the ability to talk.

  If 2 users with the same role want to speak at the same time, the first-come first-served principle applies.

Note: For the right to work, the role must also be granted the right to view Ocularis Client Lite's *Live* tab. This right is granted as part of the application rights. Furthermore, the speaker(s) must be *visible* in Ocularis Client Lite; you determine as part of the device rights.

- ### Application Rights

The *Application* tab lets you specify which applications in your NetEVS system users/groups with the selected role should be able to use. Users must be a member of the Administrator role to have access to the Management Client. Simply select the required applications:

- ***Browse*:** Determines whether users/groups with the selected role are able to use the *Browse* tab in Ocularis Client Lite.

- ***Live*:** Determines whether users/groups with the selected role are able to use the *Live* tab in Ocularis Client Lite.

- ***Setup*:** Determines whether users/groups with the selected role are able to use the *Setup* tab in Ocularis Client Lite.

- ***Status API***: Determines whether users/groups with the selected role are able to use the *Status API* (Application Program Interface). The *Status API* is used in connection with NetCentral, an add-on product that provides complete overview of surveillance system status and alarms.

- ### User-defined Event Rights

  Relevant only if user-defined events are available on your NetEVS system, the *User-defined Events* tab is divided into 2 halves:

  In the upper half you select the user-defined event for which you want to specify settings. In the lower half you then specify what users/groups with the selected role should be able to do with the selected user-defined event in Ocularis Client Lite.

  The following right is available:

  - ***Trigger user-defined event*:** On Ocularis Client Lite's *Live* tab it is possible to manually trigger your surveillance system's user-defined events. This right determines whether users with the selected role should be able to trigger the selected user-defined event in their Ocularis Client Lites.

  Note: For the right to work, the role must also be granted the right to view Ocularis Client Lite's *Live* tab. This right is granted as part of the application rights.

- ### View Group Rights

  The *View Group* tab lets you specify which view groups (i.e. groups of views in access clients; see Managing View Groups for more information) users/groups with the selected role should be able to use.

  The tab is divided into 2 halves: In the upper half you select the view group for which you want to specify role rights. In the lower half you then specify how users/groups with the selected role should be able to access the selected view group.

  - ***Visible*:** Determines whether users/groups with the selected role will be able to see the selected view group (and any views contained in the view group) in access clients.

  - ***Modify*:** Determines whether users/groups with the selected role will be able to make changes to the selected view group (and any views contained in the view group) in access clients.

  - ***Delete*:** Determines whether users/groups with the selected role will be able to delete the selected view group (and any views contained in the view group) in access clients.

  - ***Create sub-groups and views*:** Determines whether users/groups with the selected role will be able to create sub-groups and views in the selected view group.

- ### NetDVMS Server Rights

  Note: Specifying role rights on the NetDVMS *Servers* tab is only relevant if you have integrated NetDVMS servers into your NetEVS solution and are not using Ocularis Base; see Integrating NetDVMS Servers for more information.

  The tab is divided into 2 halves: In the upper half you select the NetDVMS server for which you want to specify role rights.

  In the lower half you then specify which authentication settings should apply for users/groups with the selected role. The process is described in detail in Defining Roles with Access to NetDVMS Servers.

- ### NetMatrix Rights

  Specifying role rights on the *NetMatrix* tab is only relevant if you have configured NetMatrix recipients on your NetEVS system.

  From Ocularis Client Lite it is possible to send video to selected NetMatrix recipients. The *NetMatrix* tab lets you specify which NetMatrix recipients should be selectable for this purpose in Ocularis Client Lite. If you are using Ocularis Client with Ocularis Base, NetMatrix is not necessary.

  The tab is divided into 2 halves: In the upper half you select the NetMatrix recipient for which you want to specify role rights. In the lower half you then specify if users/groups with the selected role should be able to select the NetMatrix recipient in Ocularis Client Lite.

  - ***Visible*:** Determines whether users/groups with the selected role will be able to select and send video to the NetMatrix recipient from Ocularis Client Lite.

Note: Renaming a role will not change the name of a view group based upon the role. For information about renaming view groups, see Managing View Groups.

1. In the Management Client's navigation pane, expand *Security*, and right-click *Roles*.
2. Right-click required role in the overview pane, and select *Rename Role...*

   Tip: Alternatively, press F2 on your keyboard.
3. In the dialog that opens, change the name of the role.

   Tip: You are also able to change the description of the role.
4. Click *OK*.

Before deleting a role, keep in mind that you are able to delete a role even when users and/or groups have been assigned to the role. It is therefore often a good idea to verify if any users/groups are assigned to the role before deleting it.

- ### Verifying if Any Users/Groups Are Assigned to a Role

  1. In the Management Client's navigation pane, expand *Security*, and right-click *Roles*.
  2. Select the required role in the overview pane, then select the *Users and Groups* tab in the properties pane. Any users and/or groups assigned to the role will be listed on the *Users and Groups* tab.

- ## How to Delete a Role

Note: Deleting a role will not delete a view group based upon the role. For information about deleting view groups, see Managing View Groups.

1. In the Management Client's navigation pane, expand *Security*, and right-click *Roles*.
2. Right-click the unwanted role in the overview pane, and select *Delete Role*.

   Tip: Alternatively, press DELETE on your keyboard.

3. You will be asked to confirm that you want to delete the selected role. If you are sure, click *Yes*.

With the *Effective Roles* feature, you are able to view all roles of a selected user or group. This ability is especially convenient if you are using groups; in fact it is the only way of viewing the roles of individual group members.

1. Open the *Effective Roles* window. There are 3 ways in which you can open the *Effective Roles* window:
   - From the Management Client's menu bar, by selecting *Tools* > *Effective Roles...*
   - From the overview pane (when working with roles), by right-clicking anywhere inside the pane, then selecting *Effective Roles*...
   - From the navigation pane, by expanding *Security*, then right-clicking *Roles*, then selecting *Effective Roles*...
2. In the *Effective Roles* window's *Enter user* field, type the user name of the required user.

   Tip: By clicking the browse button to the right of the field, you are able to browse for the user in question, using Active Directory.

3. If you typed the user name directly into the *Enter user* field, click the *Refresh* button in the lower part of the window to display the roles of the user.

   If you used Active Directory to browse for the user, the user's roles will be displayed automatically.

Users & Groups

- ### Add Roles Before Users and Groups

  In NetEVS, you define roles first, then you add users/groups to the roles.

  Roles determine which of NetEVS's features users and groups are able to use. In other words, roles determine rights.

  Once you have defined roles, you can add users and groups; see Assigning Users & Groups to a Role.

- ### Users and Groups Normally Added through Active Directory

  Users and groups are normally added from Active Directory, although users can also be added without Active Directory.

  What is Active Directory? Active Directory is a distributed directory service included with several Windows Server operating systems; it identifies resources on a network in order for users or applications to access them. Users as well as groups are specified centrally in Active Directory.

  Using Active Directory for adding existing user and group information to NetEVS has several benefits: The fact that users as well as groups are specified centrally in Active Directory means that you will not have to create any user accounts from scratch in NetEVS. It also means that you will not have to configure any authentication of users on NetEVS; authentication is handled by Active Directory.

Prerequisites

In order to be able to add users and groups through the Active Directory service, a server with Active Directory installed, and acting as domain controller, must be available on your network. Consult your network administrator if in doubt.

- ### Active Directory User and Group Concepts

  Active Directory uses the concepts of users and groups.

Users

Users are Active Directory objects representing individuals with a user account.

Groups

Groups are Active Directory objects capable of containing several users.

Groups can contain any number of users. By adding a group to NetEVS, you add all of its members in one step. Once the group has been added to NetEVS, any changes subsequently made to the group in Active Directory (such as new members added or old members removed) will immediately be reflected in NetEVS.

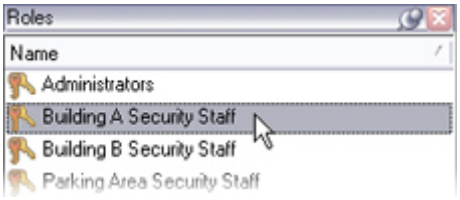
Note that a user can be a member of more than one group at a time.

- **If Not Using Active Directory**

  While adding of users and groups through Active Directory is the primary way of adding users in NetEVS, it is also possible to add users to NetEVS without Active Directory. See Adding Users without Active Directory.

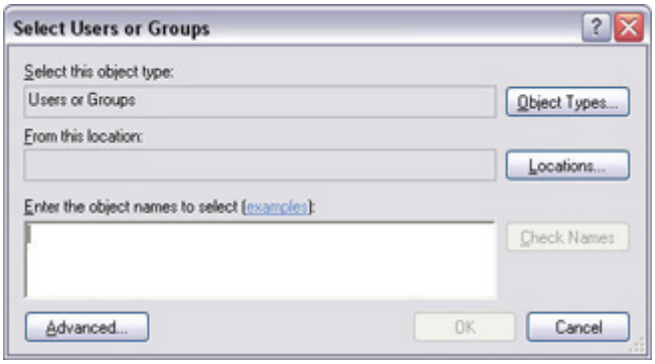
Users

1. In the Management Client's navigation pane, expand *Security*, and select *Roles*. Then select the required role in the overview pane:



2. In the properties pane, select the *Users & Groups* tab:

3. On the *Users & Groups* tab, click the *Add...* button. This will open the *Select Users and Groups* dialog:



4. In the *Select Users or Groups* window, verify that the required domain is specified in the *From this location* field. If not, click the *Locations...* button to browse for the required domain.

5. In the *Enter the object names to select* box, type the required user names, initials, or other types of identifier which Active Directory will be able to recognize.

   Tip: Typing part of a name is often enough. Use the *Check Names* feature to verify that the names, initials, etc. you have typed are recognized by Active Directory.

6. Click *OK*. The selected users/groups are now added to the *Users & Groups* tab's list of users who have been assigned the selected role.

With the *Effective Roles* feature, you are able to view all roles of a selected user or group. This ability is especially convenient if you are using groups; in fact it is the only way of viewing the roles of individual group members.

1. Open the *Effective Roles* window. There are 3 ways in which you can open the *Effective Roles* window:

- From the Management Client's menu bar, by selecting *Tools* > *Effective Roles...*
- From the overview pane (when working with roles), by right-clicking anywhere inside the pane, then selecting *Effective Roles*...
- From the navigation pane, by expanding *Security*, then right-clicking *Roles*, then selecting *Effective Roles*...

2. In the *Effective Roles* window's *Enter user* field, type the user name of the required user.

Tip: By clicking the browse button to the right of the field, you are able to browse for the user in question, using Active Directory.

3. If you typed the user name directly into the *Enter user* field, click the *Refresh* button in the lower part of the window to display the roles of the user.

If you used Active Directory to browse for the user, the user's roles will be displayed automatically.

Tip: To find out which roles a user has, use the Effective Roles feature.

Note: Keep in mind that a user may also have roles through group memberships. When that is the case, you cannot remove the individual user from the role.

1. In the Management Client's navigation pane, expand *Security*, then select *Roles*. This will list current roles in the overview pane.

2. In the overview pane, select the role from which you want to remove the user, then select the *Users or Groups* tab in the properties pane.

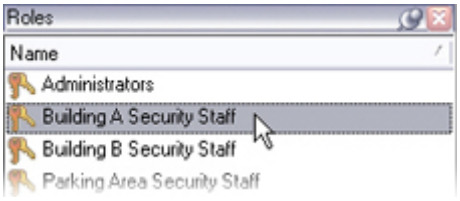
3. On the *Users or Groups* tab, select the user you want to remove, then click the *Remove* button in the lower part of the tab.

Tip: You can select more than one user if required.

4. You will be asked to confirm that you want to remove the selected user(s). If you are sure, click *Yes*.

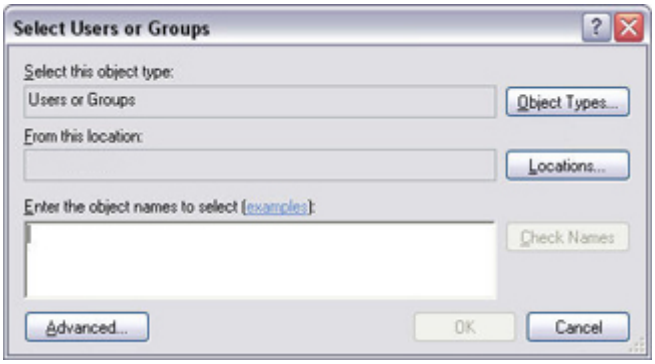
Groups

1. In the Management Client's navigation pane, expand *Security*, and select *Roles*. Then select the required role in the overview pane:



2. In the properties pane, select the *Users & Groups* tab:

3. On the *Users & Groups* tab, click the *Add...* button. This will open the *Select Users and Groups* dialog:



4. In the *Select Users or Groups* window, verify that the required domain is specified in the *From this location* field. If not, click the *Locations...* button to browse for the required domain.

5. In the *Enter the object names to select* box, type the required user names, initials, or other types of identifier which Active Directory will be able to recognize.

   Tip: Typing part of a name is often enough. Use the *Check Names* feature to verify that the names, initials, etc. you have typed are recognized by Active Directory.

6. Click *OK*. The selected users/groups are now added to the *Users & Groups* tab's list of users who have been assigned the selected role.

With the *Effective Roles* feature, you are able to view all roles of a selected user or group. This ability is especially convenient if you are using groups; in fact it is the only way of viewing the roles of individual group members.

1. Open the *Effective Roles* window. There are 3 ways in which you can open the *Effective Roles* window:

   - From the Management Client's menu bar, by selecting *Tools* > *Effective Roles...*

- From the overview pane (when working with roles), by right-clicking anywhere inside the pane, then selecting *Effective Roles*...
- From the navigation pane, by expanding *Security*, then right-clicking *Roles*, then selecting *Effective Roles*...

2. In the *Effective Roles* window's *Enter user* field, type the user name of the required user.

   Tip: By clicking the browse button to the right of the field, you are able to browse for the user in question, using Active Directory.

3. If you typed the user name directly into the *Enter user* field, click the *Refresh* button in the lower part of the window to display the roles of the user.

   If you used Active Directory to browse for the user, the user's roles will be displayed automatically.

Tip: To find out which roles are held by a group, or by individual group members, use the Effective Roles feature.

Note: Remember that group members may also hold roles as individuals.

1. In the Management Client's navigation pane, expand *Security*, then select *Roles*. This will list current roles in the overview pane.

2. In the overview pane, select the role from which you want to remove the group, then select the *Users or Groups* tab in the properties pane.

3. On the *Users or Groups* tab, select the group you want to remove, then click the *Remove* button in the lower part of the tab.

Tip: You can select more than one group, or a combination of groups and individual users, if required.

4. You will be asked to confirm that you want to remove the selected group(s)/user(s). If you are sure, click *Yes*.

Not Using Active Directory

While you primarily add NetEVS users and groups to roles through Active Directory, it is also possible to add individual users—but not groups—without Active Directory. If not using Active Directory, note the following:

- When installing the Management Server, the user under which the Management Server service runs must be a local PC user on the server. See also Management Server Installation.

- On the computer running the Management Server, simple file sharing must be disabled the following way:

    1. On the computer running Management Server, right-click the *Start* button, and select *Explore*.

    2. In the window that opens, select the *Tools* menu, then select *Folder Options...*

    3. Select the *View* tab.

    4. Scroll to the bottom of the *Advanced settings* list, and make sure that the *Use simple file sharing (Recommended)* check box is cleared.

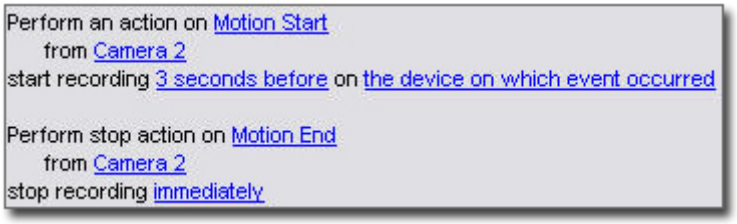
    5. Click OK, and close the window.

- You add users to roles through the Management Client almost as when adding users from Active Directory (see Assigning Users & Groups to a Role). However, when adding users, you must refer to particular users on particular computers, as in the following example where the user USER001 on the computer PC001 is added:

- When users added this way log in to NetEVS, the user must *not* specify any server name, PC name, or IP address as part of their user names. Example of a correctly specified user name: USER001. Example of an incorrectly specified user name: PC001/USER001. The users should of course still specify their passwords, etc..

Rules

Rules are a central element in NetEVS. The behavior of a NetEVS surveillance system is to a very large extent determined by rules. Rules determine highly important settings, such as when cameras should record, when PTZ (Pan/Tilt/Zoom) cameras should patrol, when notifications should be sent, etc.


Perform an action on Motion Start
from Camera 2
start recording 3 seconds before on the device on which event occurred
Perform stop action on Motion End
from Camera 2
stop recording immediately

Example: A rule specifying that a particular camera should begin recording when it detects motion

- **What You Can Do with Rules**

  In short, rules specify actions which should be carried out under particular conditions. Example: When motion is detected (condition), a camera should begin recording (action).

  The following are *examples* of what you can do with rules:

  - Start and stop recording
  - Set non-default live frame rate
  - Set non-default recording frame rate
  - Start and stop PTZ patrolling
  - Pause and resume PTZ patrolling
  - Move PTZ cameras to specific positions
  - Set output to activated/deactivated state
  - Send notifications via e-mail
  - Generate log entries
  - Generate alerts
  - Apply new device settings, for example a different resolution on a camera
  - Make video appear in NetMatrix
  - Start and stop plug-ins
  - Start and stop feeds from devices

    How is stopping the feed from a device different from manually disabling the device? Stopping a device means that video will no longer be transferred from the device to NetEVS, in which case neither live viewing nor recording will be possible. However, a device on which the feed has been stopped will still be able to communicate with the

recording server, and the feed from device can be started automatically through a rule, as opposed to when the device is manually disabled in the Management Client.

IMPORTANT: Some rule content may require that certain features are enabled for the devices in question. For example, a rule specifying that a camera should record will not work as intended if recording is not enabled for the camera in question. Before creating a rule it is therefore highly recommended that you verify that the devices involved will be able to perform as intended. For a number of typically required rules, such prerequisites are described in *How to Create Typical Rules*.

- ### How a Rule Is Triggered

  Rules can be triggered by 2 types of conditions:

  - **Events:** When events occur on the surveillance system (for example when motion is detected, when the system receives input from external sensors, etc.)
  - **Time:** When specific periods of time are entered (for example *Thursday 13th May 2010 from 07.00 to 07.59*, or *every Saturday and Sunday*)

- ### What You Can Cover in a Rule

  Your exact number of options depends on the type of rule you want to create, and on the number of devices available on your system.

  Rules, however, provide a high degree of flexibility: You are able to combine event and time conditions, you are able to specify several actions in a single rule, and very often you are able to create rules covering several or all of the devices on your system.

  You can make your rules as simple or complex as required. For example, you can create very simple time-based rules:

  > **Example ➡ Very Simple Time-Based Rule:** *On Mondays between 08.30 and 11.30 (time condition), Camera 1 and Camera 2 should start recording (action) when the time period begins and stop recording (stop action) when the time period ends.*

  And you can create very simple event-based rules, involving events on one device only:

  > **Example➡Very Simple Event-Based Rule:** *When motion is detected (event condition) on Camera 1, Camera 1 should start recording (action) immediately, then stop recording (stop action) after 10 seconds.*

  However, even though an event-based rule is activated by an event on one device, you can specify that actions should take place on one or more other devices.

  > **Example➡Rule Involving Several Devices:** *When motion is detected (event condition) on Camera 1, Camera 2 should start recording (action) immediately, and the siren connected to Output 3 should sound (action) immediately; then, after 60 seconds, Camera 2 should stop recording (stop action), and the siren connected to Output 3 should stop sounding (stop action).*

  You can of course also combine events and scheduled times in a rule:

  > **Example➡Rule Combining Time, Events, and Devices:** *When motion is detected (event condition) on Camera 1, and the day of the week is Saturday or Sunday (time condition), Camera 1 and Camera 2 should start recording (action) immediately, and a notification should be sent to the security manager (action); then, 5 seconds after motion is no longer detected on Camera 1 or Camera 2, the 2 cameras should stop recording (stop action).*

The required complexity of rules will vary from organization to organization: Some may require only a number of simple rules; some may require a mix of simple and complex rules.

- ### Create Many Simple or a Few Complex Rules?

  Depending on your organization's requirements, it is often a good idea to create many simple rules rather than a few complex rules.

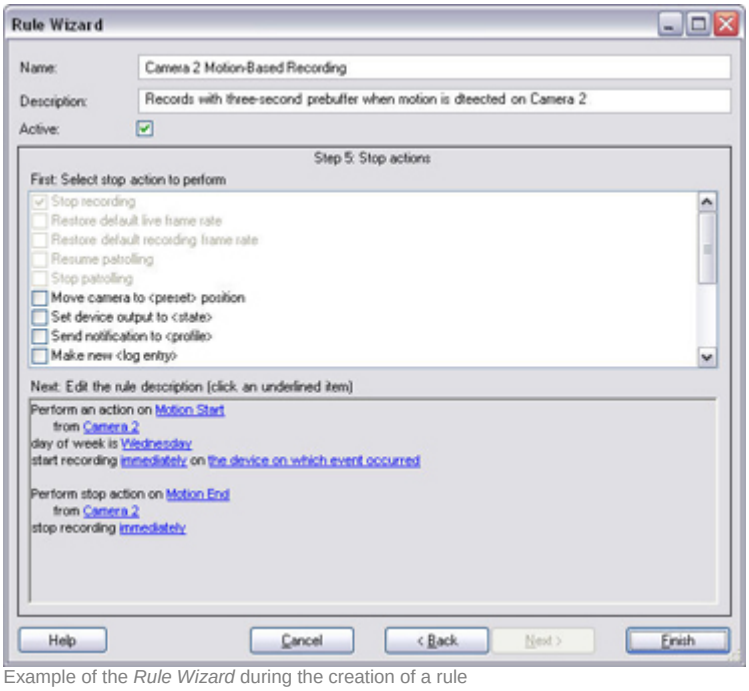
  Even though this will lead to you having more rules, it will generally make it much easier for you to maintain an overview of what your rules do.

  Keeping your rules simple also means that you will have much more flexibility when it comes to deactivating/activating individual rule elements—with simple rules, you can deactivate/activate entire rules when required.

- ### Wizard Guides You through Creating Rules

  You create and manage your rules in the Management Client: In the *Navigation* pane, expand the *Rules and Alerts* folder, then select *Rules*.

  When you create rules, you will be guided by the *Rule Wizard*:



Example of the *Rule Wizard* during the creation of a rule

The *Rule Wizard* provides a highly intuitive approach:

- It helps you stay focused by listing only relevant options.
- It ensures that a rule will not contain missing elements.
- Based on your rule's content, it automatically suggests suitable stop actions (i.e. what should take place when the rule no longer applies), ensuring that you will not unintentionally create a never-ending rule.

Read more about rules creation and management, including how to use the *Rule Wizard*, under *Managing Rules*.

Tip: To view step-by-step examples of how to create typically required rules, see *How to Create Typical Rules*.

- ### Default Rules

  NetEVS comes with a number of default rules, ensuring that basic features work without any user intervention being required. See Default Rules.

NetEVS comes with a number of default rules, ensuring that basic features work without any user intervention being required.

IMPORTANT: Like other rules, default rules can be deactivated and/or modified as required. The fact that default rules are present does therefore not in itself guarantee that your NetEVS system will work, as the default rules may subsequently have been deactivated or modified.

- ### Default Start Feed Rule

  The default start feed rule ensures that video feeds from all connected cameras are automatically fed to the NetEVS system.

  IMPORTANT: While the default rule enables access to connected cameras' video feeds immediately upon installing the system, it does not guarantee that video will be recorded, as cameras' recording settings must be specified separately.

  IMPORTANT: Like other rules, the default rule can be deactivated and/or modified as required. The fact that the default rule is present does therefore not in itself guarantee that video feeds will automatically be fed to the NetEVS system, as the default rule may subsequently have been deactivated or modified.

  In case you accidentally delete the default start feed rule, you can recreate it with the following content:

  ```
  Perform an action in a time interval always start feed on All Cameras
  Perform an action when time interval ends stop feed immediately
  ```

- ### Default Start Audio Feed Rule

  The default start audio feed rule ensures that audio feeds from all connected microphones and speakers are automatically fed to the NetEVS system.

  IMPORTANT: Like other rules, the default rule can be deactivated and/or modified as required. The fact that the default rule is present does therefore not in itself guarantee that audio feeds will automatically be fed to the NetEVS system, as the default rule may subsequently have been deactivated or modified.

  IMPORTANT: While the default rule enables access to connected microphones' and speakers' audio feeds immediately upon installing the system, it does not guarantee that audio will be recorded, as recording settings must be specified separately.

  In case you accidentally delete the default start audio feed rule, you can recreate it with the following content:

  ```
  Perform an action in a time interval always start feed on All
  Microphones, All Speakers
  Perform an action when time interval ends stop feed immediately
  ```

- ### Default Record on Motion Rule

  The default record on motion rule ensures that as long as motion is detected in video from cameras, the video will be recorded, provided recording is enabled for the cameras in question (recording is by default enabled).

  IMPORTANT: While the default rule specifies recording based on detected motion, it does not guarantee that video will be recorded, as individual cameras' recording may have been disabled for one or more cameras. Even when recording is enabled, remember that the quality of recordings may be affected by individual camera's recording settings.

  IMPORTANT: Like other rules, the default rule can be deactivated and/or modified as required. The fact that the default rule is present does therefore not in itself guarantee that video will be recorded upon detected motion, as the default rule may subsequently have been deactivated or modified.

  In case you accidentally delete the default record on motion rule, you can recreate it with the following content:

  ```
  Perform an action on Motion Started from All Cameras start recording
  3 seconds before on the device on which event occurred
  Perform stop action on Motion Stopped from All Cameras stop recording
  3 seconds after
  ```

- ### Default Goto Preset when PTZ Is Done Rule

  The default goto preset when PTZ is done rule ensures that PTZ (Pan/Tilt/zoom) cameras will go to their respective default preset positions after they have been operated manually.

  IMPORTANT: This rule is by default not enabled. Even when the rule is enabled, you must have defined default preset positions for the required PTZ cameras in order for the rule to work; you do this on the *Presets* tab.

  In case you accidentally delete the default goto preset when PTZ is done rule, you can recreate it with the following content:

  ```
  Perform an action on PTZ Manual Session Stopped from All Cameras
  Move immediately to default preset on the device on which event
  occurred
  ```

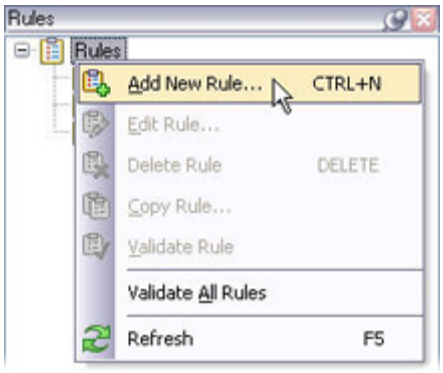
Create and manage rules in the Management Client: In the Management Client's *Navigation* pane, expand the *Rules and Alerts* folder, then select *Rules*. A *Rules* list will appear in the overview pane.

The *Rules* list provides an overview of all existing rules on your system. From the *Rules* list, you are able to create rules, edit rules, copy rules, validate rules, etc.

Tip: To view step-by-step descriptions of how to create typically required rules, see *How to Create Typical Rules*.

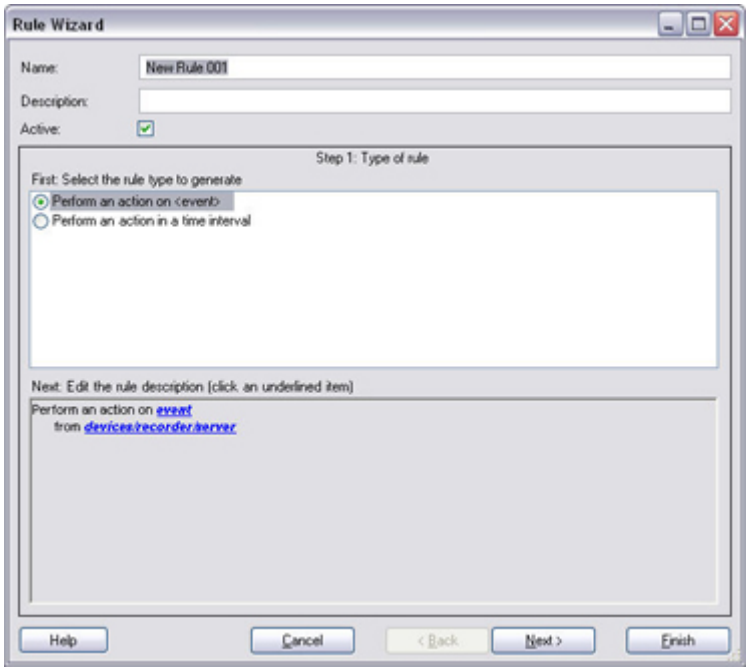
- ### Creating a New Rule

  1. In the overview pane, right-click the *Rules* item, and select *Add New Rule...*:



Tip: Instead of right-clicking to select *Add New Rule*, you can press CTRL+N on your keyboard.

This will open the *Rule Wizard*:



The wizard will guide you through the process of specifying the content of your rule. The wizard makes the process interactive, yet intuitive: based on your main selections, it will ask you to specify your exact requirements for the rule.

2. Begin by specifying a name (compulsory) and a description (optional) of the new rule in the *Name* and *Description* fields respectively.

   Tip: Always use a descriptive name for the rule. Once you have several rules, you will find that descriptive names are a great help when identifying individual rules.

3. Then select the required type of condition for the rule: either a rule which performs one or more actions when a particular event occurs, or a rule which performs one or more actions when a specific period of time is entered:

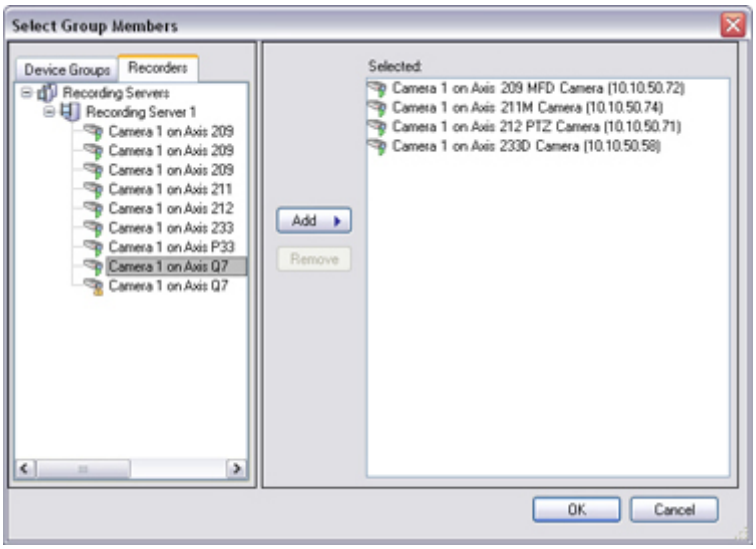
- **Perform an action on <event>**

  If you select an event-based rule, the lower part of the wizard window will display an initial rule description:

  Click the underlined items in the rule description in order to specify its exact content:

  - ***Event***: Clicking the *event* link lets you select the event which must occur in order for the rule to apply (for example *Motion Started*).

  - ***Devices/recording server/management server***: When you have selected the required event, clicking the *devices/recording server/management server* link lets you specify the devices on which the event should occur in order for the rule to apply. Depending on your event specification, you may be able to select from a list of cameras, inputs, outputs, etc. In the following example illustration, the selectable devices are all cameras:

    
    Select Group Members
Device Groups
Recorders
Recording Servers
Recording Server 1
Camera 1 on Axis 209
Camera 1 on Axis 209
Camera 1 on Axis 209
Camera 1 on Axis 211
Camera 1 on Axis 212
Camera 1 on Axis 233
Camera 1 on Axis P33
Camera 1 on Axis Q7
Camera 1 on Axis Q7
Add
Remove
Selected:
Camera 1 on Axis 209 MFD Camera (10.10.50.72)
Camera 1 on Axis 211M Camera (10.10.50.74)
Camera 1 on Axis 212 PTZ Camera (10.10.50.71)
Camera 1 on Axis 233D Camera (10.10.50.58)
OK
Cancel

    You specify the required devices by moving them from the *Available devices* list to the *Selected devices* list.

    To move a device from the *Available devices* list to the *Selected devices* list, either select the device and click the *Add* button, double-click the device, or simply drag the device from one list to the other.

    Tip: When devices are grouped into so-called device groups, you can quickly move all devices in a group simply by moving the group folder.

    When the required devices are listed in the *Selected devices* list, click *OK*.

  You have now specified the exact content of the first part of the rule description:

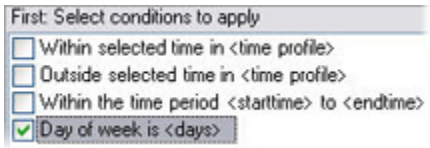
Example only; your selections may be different

- **Perform an action in a time interval**

  If you select a time-based rule, no more information is required on the wizard's first step.

4. Click the wizard's *Next* button to go to the wizard's second step. On the wizard's second step you are able to define further conditions for the rule.

5. Select one or more conditions, for example *Day of week is <day>*:



Example only; your selections may be different

Depending on your selections, the lower part of the wizard window lets you edit the rule description:

Example only; your selections may be different

Click the underlined items in ***bold italics*** to specify their exact content. For example, clicking the *days* link in our example would let you select one or more days of the week on which the rule should apply.

6. Having specified your exact conditions, click the wizard's *Next* button to move to the next step of the wizard and select which actions should be covered by the rule.

   Depending on the content and complexity of your rule, further wizard steps may let you define further information, such as stop events and stop actions. For example, if a rule specifies that a device should perform a particular action during a time interval (for example Thursday between 08.00 and 10.30), the wizard may ask you to specify what should happen when that time interval ends.

7. Your rule is by default active, meaning that once you have created it, it will be applied as soon as the rule's conditions are met.

   If you do not want the rule to be active straight away, clear the *Active* check box:

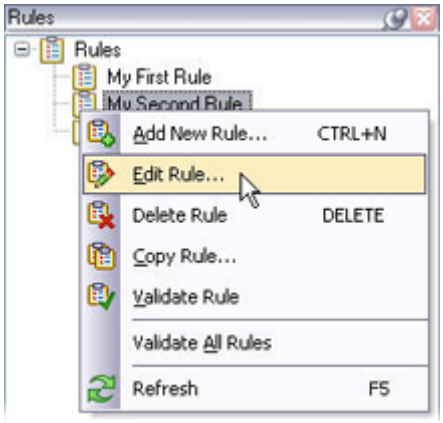
Tip: You can always activate/deactivate the rule later.

8. Click the wizard's *Finish* button.

Tip: To view step-by-step descriptions of how to create typically required rules, see *How to Create Typical Rules*.

- ## Editing a Rule

1. In the overview pane, right-click the required rule, and select *Edit Rule...*:



   The *Rule Wizard* opens.

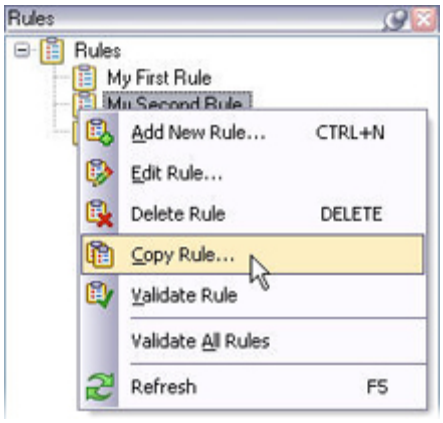
2. In the *Rule Wizard*, change the rule as required.

3. Click the *Rule Wizard*'s *Finish* button.

- ## Copying a Rule

The Management Client conveniently lets you copy and re-use the content of rules. This way you can avoid having to create near-identical rules from scratch.

1. In the overview pane, right-click the rule you wish to copy, and select *Copy Rule...*:



   The *Rule Wizard* opens, displaying a copy of the selected rule.

2. In the *Rule Wizard*, rename and change the rule as required.

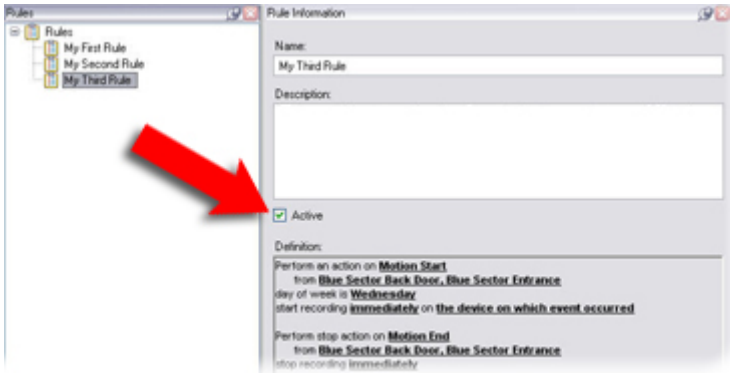
3. Click the *Rule Wizard*'s *Finish* button.

- **Deactivating and Activating a Rule**

  A rule is by default active, meaning that NetEVS will apply the rule as soon as the rule's conditions apply. If you do not want a rule to be active, you can deactivate the rule. When the rule is deactivated, NetEVS will not apply the rule, even if the rule's conditions apply. A deactivated rule can easily be activated later.

Deactivating a Rule

1. In the overview pane, select the required rule.
2. Clear the *Active* check box in the properties pane:



Arrow indicates *Active* check box

3. Save the setting by clicking the *Save* button in the Management Client's toolbar.
4. The deactivated rule will be indicated by a different icon in the *Rules* list:

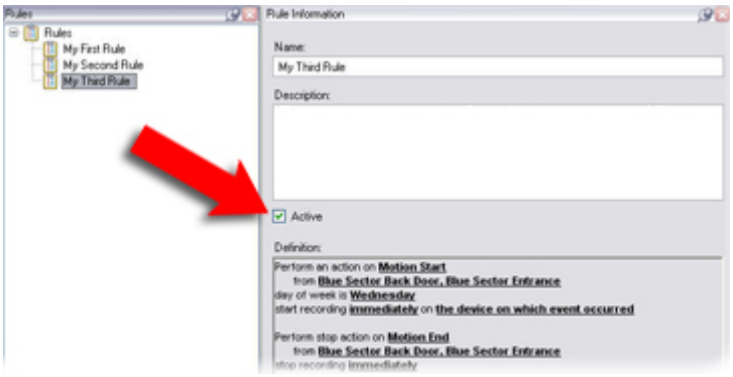
Example: Different icon indicates that third rule is deactivated

Activating a Rule

When you want to activate the rule again, simply select the required rule, select the *Activate* check box, and save the setting.

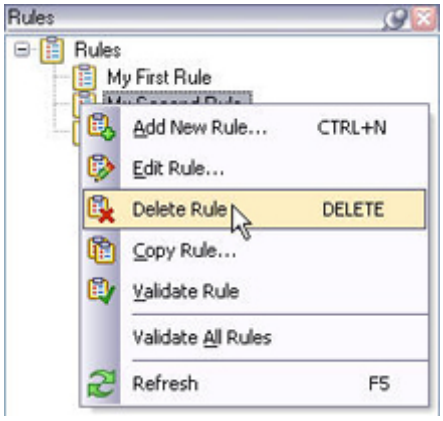
- **Deleting a Rule**

Tip: You do not necessarily have to delete an unwanted rule; you may also just temporarily deactivate the rule by clearing the *Active* check box in the *Rule Information* pane for the rule in question, then saving the setting by selecting the Management Client's *File* menu..



If you wish to delete an existing rule, do the following:

1. In the overview pane, right-click the rule you wish to delete, and select *Delete Rule...*:



Tip: Instead of right-clicking to select *Delete Rule*, you may simply press the DELETE key on your keyboard.

2. You will be asked to confirm that you wish to delete the rule. If you are sure that you wish to delete the rule, click the *Yes* button.

3. The rule will be removed from the overview pane's *Rules* list.

- ## Renaming a Rule

There are 2 ways of renaming a rule: With the *Rules Wizard,* or in the *Rule Information* pane.

To rename a rule using the ***Rules Wizard***, do the following:

1. In the overview pane, right-click the required rule, and select *Edit Rule*. This will open the selected rule in the *Rules Wizard*.

2. In the wizard's *Name* field, edit the name as required.

3. Click the wizard's *Finish* button.

To rename a rule in the ***properties pane***, do the following:

4. In the overview pane, select the required rule. Information about the rule will be displayed in the properties pane.

5. In the *Name* field, edit the name as required.

6. Save the setting by clicking the Management Client's *Save* button:

- ## Validating an Individual Rule

You are able to validate the content of an individual rule.

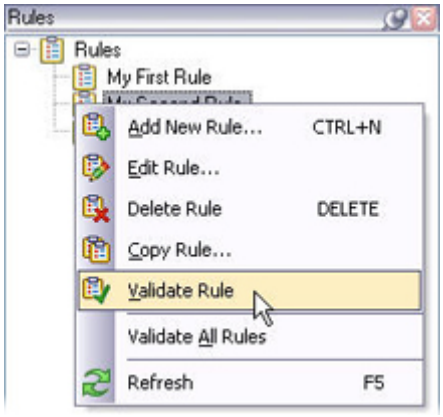
Why would I need to validate the content of rules? When you create a rule, the *Rules Wizard* ensures that all of the rule's elements make sense. However, when a rule has existed for some time, one or more of the rule's elements may have been affected by other configuration, and the rule may no longer work. For example, if a rule is triggered by a particular time profile, the rule will not work if the time profile in question has subsequently been deleted. Such unintended effects of configuration may be hard to keep an overview of; rule validation helps you keep track of which rules have been affected.

IMPORTANT: Validation takes place on a per-rule basis; each rule is validated in isolation. It is currently not possible to validate rules against each other (for example in order to see whether one rule conflicts with another rule), not even if using the *Validate All Rules* feature.

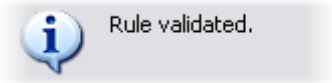
Furthermore, it is not possible to validate whether configuration of prerequisites outside the rule itself may prevent the rule from working. For example, a rule specifying that recording should take place when motion is detected by a particular camera will validate OK if the elements in the rule itself are correct, even though motion detection (which is enabled on a camera level, not through rules) has not been enabled for the camera in question.

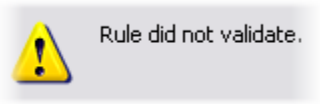
To validate an individual rule, do the following in the Management Client:

1. In the overview pane, right-click the rule you wish to validate, and select *Validate Rule*:



2. A simple dialog will inform you whether the rule validated or not:





- ## Validating All Rules in One Step

  You are able to validate the content of all rules in one step.

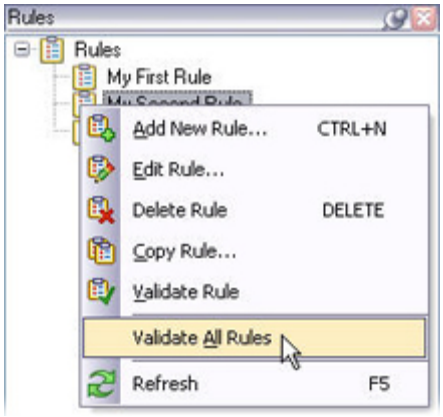
  Why would I need to validate the content of rules? When you create a rule, the *Rules Wizard* ensures that all of the rule's elements make sense. However, when a rule has existed for some time, one or more of the rule's elements may have been affected by other configuration, and the rule may no longer work. For example, if a rule is triggered by a particular time profile, the rule will not work if the time profile in question has subsequently been deleted. Such unintended effects of configuration may be hard to keep an overview of; rule validation helps you keep track of which rules have been affected.

  IMPORTANT: Validation takes place on a per-rule basis; each rule is validated in isolation. It is currently not possible to validate rules against each other (for example in order to see whether one rule conflicts with another rule), not even if using the *Validate All Rules* feature.

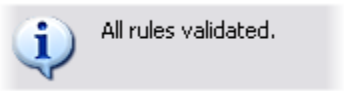
  Furthermore, it is not possible to validate whether configuration of prerequisites outside the rule itself may prevent the rule from working. For example, a rule specifying that recording should take place when motion is detected by a particular camera will validate OK if the elements in the rule itself are correct, even though motion detection (which is enabled on a camera level, not through rules) has not been enabled for the camera in question.

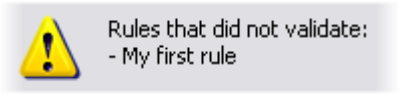
  To validate all rules in one step, do the following in the Management Client:

  1. In the overview pane, right-click the rule you wish to validate, and select *Validate All Rules*:

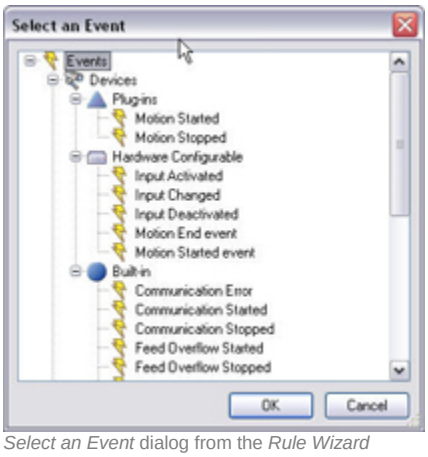
     

  2. A simple dialog will inform you whether the rule validated or not. If one or more rules did not validate , the dialog will list the names of affected rules:



When creating an event-based rule in the *Rule Wizard* (see *About Rules* and *Managing Rules*), you are able to select between a number of different events.



Select an Event dialog from the *Rule Wizard*

In order for you to get a good overview, selectable events are listed in groups according to whether they are:

- Related to plug-ins: Plug-ins
- Dependent on hardware configuration: Hardware Configurable
- Built into NetEVS itself: Built-in
- Related to recording servers: Recording Servers
- User-defined events: User-defined

Each type of event is described below:

Event	Description
Events Related to Plug-ins	
Motion Started	Occurs when NetEVS detects motion in video received from cameras. **Note:** This type of event requires that NetEVS's motion detection is enabled for the cameras to which the event will be linked. Exactly what constitutes motion depends on the motion detection settings specified for individual cameras in NetEVS. **Note:** In addition to NetEVS's motion detection, some cameras are—depending on configuration of the camera hardware—themselves able to detect motion. Such camera-detected motion detection can also be used in NetEVS rules. Such events are called *Hardware Configurable*, as they do not work until configured on the camera hardware itself. See Events dependent on hardware configuration below.

Motion Stopped	Occurs when motion is no longer detected in received video. See also the notes in the description of the *Motion Started* event above.
Events Dependent on Hardware Configuration The configuration on which these events depend may only be possible all some hardware. For example, only selected cameras may be able to detect tampering or temperature changes.	
Audio Falling	Occurs when the audio signal on an audio-enabled device is falling. For exact information about what constitutes a falling and a rising signal respectively, refer to documentation for the device in question. **Note:** This type of event requires that at least one device on your system has an audio unit connected. The event will not work until configured on the hardware itself.
Audio Passing	Occurs when the state of an audio-enabled device is changed, regardless of which state the device is changed to. **Note:** This type of event requires that at least one device on your system has an audio unit connected. The event will not work until configured on the hardware itself.
Audio Rising	Occurs when the audio signal on an audio-enabled device is rising. For exact information about what constitutes a falling and a rising signal respectively, refer to documentation for the device in question. **Note:** This type of event requires that at least one device on your system has an audio unit connected. The event will not work until configured on the hardware itself.
Images Received	Occurs when pre-alarm images are received from a camera. Pre-alarm images are available for selected cameras only; such cameras are capable of sending of one or more single still images from immediately before an event took place to the surveillance system via SMTP e-mail. **Note:** This type of event requires that at least one camera on your system supports pre-alarm images. The event will not work until configured on the hardware itself. **Tip:** Consider using prebuffering, defined on the Record tab, as an alternative to pre-alarm images.
Input Activated	Occurs when an external input unit connected to an input port on a device is activated. **Note:** This type of event requires that at least one device on your system has an external input unit connected to an input port. The event will not work until configured on the hardware itself.
Input Changed	Occurs when the state of an external input unit connected to an input port on a device is changed, regardless of which state the external input unit is changed to.

	Note: This type of event requires that at least one device on your system has an external input unit connected to an input port. The event will not work until configured on the hardware itself.
Input Deactivated	Occurs when an external input unit connected to an input port on a device is deactivated. **Note:** This type of event requires that at least one device on your system has an external input unit connected to an input port. The event will not work until configured on the hardware itself.
Motion Started (HW)	Occurs when a camera detects motion in its video stream. In addition to NetEVS's motion detection, some cameras are—depending on configuration of the camera hardware—themselves able to detect motion. Such camera-detected motion detection can also be used in NetEVS rules. **Note:** The event will not work until configured on the camera hardware itself. Exact use of camera-based motion detection depends on the configuration of the cameras in question.
Motion Stopped (HW)	Occurs when a camera no longer detects motion in its video stream. See also the description of the *Motion Started* event above. **Note:** The event will not work until configured on the camera hardware itself. Exact use of camera-based motion detection depends on the configuration of the cameras in question.
Tampering	Occurs when a device detects that it is being tampered with. **Note:** The event will not work until configured on the hardware itself. Exact use of tampering detection depends on the configuration of the devices in question.
Temperature	Occurs when a device detects a temperature change, that a certain temperature is exceeded, or similar. **Note:** The event will not work until configured on the hardware itself. Exact use of temperature detection depends on the configuration of the devices in question.
Video Lost	Occurs when a device detects that a video signal is lost. **Note:** The event will not work until configured on the hardware itself. Exact use of this type of detection depends on the configuration of the devices in question.
Events Built into NetEVS Itself	
Communication	Occurs when a connection to a device is lost; or when an attempt is made

Error	to communicate with a device, and the attempt is unsuccessful.
Communication Started	Occurs when communication with a device is successfully established.
Communication Stopped	Occurs when communication with a device is successfully stopped.
Feed Overflow Started	Feed overflow occurs when a recording server is unable to process received video as quickly as specified in the configuration, and therefore is forced to discard some of the images. **Tip:** This rare event can be used for triggering actions that will help you avoid the problem, e.g. for lowering the recording frame rate.
Feed Overflow Stopped	Occurs when feed overflow (see description of the *Feed Overflow Started* event) ends.
Live Client Feed Requested	Occurs when a user of Ocularis Client/Ocularis Client Lite requests a live stream from a device. **Note:** The event occurs upon the request—even if the client user's request subsequently turns out to be unsuccessful, for example because the client user does not have the rights required for viewing the requested live feed or because the feed is for some reason stopped.
Output Activated	Occurs when an external output unit connected to an output port on a device is activated. **Note:** This type of event requires that at least one device on your system has an external input unit connected to an output port.
Output Changed	Occurs when the state of an external output unit connected to an output port on a device is changed, regardless of which state the external input unit is changed to. **Note:** This type of event requires that at least one device on your system has an external input unit connected to an output port.
Output Deactivated	Occurs when an external output unit connected to an output port on a device is deactivated. **Note:** This type of event requires that at least one device on your system has an external input unit connected to an output port.
Live Client Feed Terminated	Occurs when a user of Ocularis Client/Ocularis Client Lite no longer requests a live stream from a device.

Manual PTZ Session Started	Occurs when a manually operated PTZ session (as opposed to a PTZ session based on scheduled patrolling or automatically triggered by an event) is started on a camera. **Note:** This type of event requires that the cameras to which the event will be linked are PTZ (Pan/Tilt/Zoom) cameras.
Manual PTZ Session Stopped	Occurs when a manually operated PTZ session (as opposed to a PTZ session based on scheduled patrolling or automatically triggered by an event) is stopped on a camera. **Note:** This type of event requires that the cameras to which the event will be linked are PTZ (Pan/Tilt/Zoom) cameras.
Recording Started	Occurs when recording is started.
Recording Stopped	Occurs when recording is stopped.
Settings Changed	Occurs when settings on a device are successfully changed.
Settings Changed Error	Occurs when an attempt is made to change settings on a device, and the attempt is unsuccessful.
Events Related to Recording Servers	
Archive Available	Occurs when an archive for a recording server becomes available after having been unavailable (see *Archive Unavailable* below).
Archive Unavailable	Occurs when an archive for a recording server becomes unavailable, for example if the connection to an archive located on a network drive is lost. When this is the case, it will not be possible to archive recordings. You can use the event to, for example, trigger a notification profile so an e-mail notification is automatically sent to relevant people in your organization.
Database Disk Full	Occurs when a database disk is full. A database disk is considered to be full when there is less than 500 MB of space is left on the disk: In order to prevent operating system failures due to insufficient disk space, the oldest records in the database will automatically be deleted for all cameras recording on the disk in question when less than 500 MB of space is left on the disk containing the database, regardless of any time or size limits specified for the database. This will help ensure that at least 500 MB of disk space will be available for operating system use.

Database Repair	Occurs if a database becomes corrupted, in which case NetEVS will automatically attempt 2 different database repair methods: a fast repair and a thorough repair.
Database Storage Area Available	Occurs when a storage area for a recording server becomes available after having been unavailable (see *Database Storage Area Unavailable* below). You can, for example, use the event to start recording if it has been stopped by a *Database Storage Area Unavailable* event (see below).
Database Storage Area Unavailable	Occurs when a storage area for a recording server becomes unavailable, for example if the connection to a storage area located on a network drive is lost. When this is the case, it will not be possible to store recordings. You can use the event to, for example, stop recording and trigger a notification profile so an e-mail notification is automatically sent to relevant people in your organization.
Failover Started	Occurs when a failover server takes over from a recording server. A failover server is a spare recording server which can take over if a regular recording server becomes unavailable.
Failover Stopped	Occurs when a recording server becomes available again, and is able to take over from a failover server.

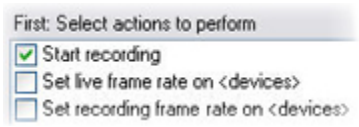
User-defined Events

A number of events custom-made to suit your system may also be selectable. Such user-defined events can be used for:

- Making it possible for end users to manually trigger events while viewing live video in the Ocularis Client/Ocularis Client Lite.
- Countless other purposes. For example, you may create user-defined events which will occur if a particular type of data is received from a device.

For information about how to define user-defined events in the Management Client, see Managing User-defined Events.

When creating rules in the *Rule Wizard* (see *About Rules* and *Managing Rules*), you are able to select between a number of different actions:



Example: Selecting actions

Some of these actions will require a subsequent stop action. Example: If you select the action *Start recording*, recording will start and potentially continue indefinitely. Therefore, the action *Start recording* has a compulsory stop action called *Stop recording*. The *Rule Wizard* makes sure you specify such stop actions when necessary; stop actions are typically specified on one of the last steps of the wizard:

Selecting stop actions. In the example, note the compulsory stop action (selected, dimmed), the non-relevant stop actions (dimmed) and the optional stop actions (selectable).

Each type of action is described in the following (additional actions may, however, be available if your NetEVS installation uses add-on products, special plug-ins, etc.). For each type of action, stop action information is listed as well:

Action	Description
Start recording	Begin recording, i.e. begin saving video in the database of the selected camera. When selecting this type of action, the *Rule Wizard* will prompt you to specify when recording should start (either immediately or a number of seconds before the triggering event/beginning of the triggering time interval) as well as on which devices the action should take place. **Note:** This type of action requires that recording has been enabled on the cameras to which the action will be linked. Being able to save video from before an event or time interval is only possible if prebuffering is enabled for the cameras in question. You enable recording and specify prebuffering settings for a camera on the *Record* tab. **Stop action required:** This type of action requires one or more stop actions. Depending on how the action was triggered, the stop action may be performed either on an event or after a period of time. In one of the subsequent steps of the *Rule Wizard*, the wizard will automatically prompt you to specify the stop action *Stop recording*. Without this stop action, recording would potentially continue indefinitely. You will also have the option of specifying further stop actions.
Start feed on <devices>	Begin video feed from camera devices to NetEVS. When the feed from a device is started, video will be transferred from the device to NetEVS, in which case live viewing and recording of video will be possible. **IMPORTANT:** While this type of action enables access to selected cameras' video feeds, it does not guarantee that video will be recorded, as cameras' recording settings must be specified separately. When selecting this type of action, the *Rule Wizard* will prompt you to specify on which devices feeds should be started. **Tip:** NetEVS has a default rule ensuring that feeds are always started on all cameras. Note however, that the default rule may have been manually deactivated or modified. See About Rules for more information.

Action	Description
	Stop action required: This type of action requires one or more stop actions. Depending on how the action was triggered, the stop action may be performed either on an event or after a period of time. In one of the subsequent steps of the *Rule Wizard*, the wizard will automatically prompt you to specify the stop action *Stop feed*. You will also have the option of specifying further stop actions. Note that using the compulsory stop action *Stop feed* to stop the feed from a device means that video will no longer be transferred from the device to NetEVS, in which case live viewing and recording of video will no longer be possible. However, a device on which the feed has been stopped will still be able to communicate with the recording server, and the feed can be started again automatically through a rule, as opposed to when the device has been manually disabled in the Management Client.
Set live frame rate on <devices>	Sets a particular frame rate to be used when displaying live video from the selected cameras, instead of the cameras' default frame rate. **Tip:** The default live frame rate of a camera is specified on the *Settings* tab. When selecting this type of action, the *Rule Wizard* will prompt you to specify which frame rate to set, and on which devices. **Note:** Always verify that the frame rate (number of frames per second) you specify is available on the cameras in question. **Stop action required:** This type of action requires one or more stop actions. Depending on how the action was triggered, the stop action may be performed either on an event or after a period of time. In one of the subsequent steps of the *Rule Wizard*, the wizard will automatically prompt you to specify the stop action *Restore default live frame rate*. Without this stop action, the default frame rate would potentially never be restored. You will also have the option of specifying further stop actions.
Set recording frame rate on <devices>	Sets a particular frame rate to be used when saving recorded video from the selected cameras in the database, instead of the cameras' default recording frame rate. When selecting this type of action, the *Rule Wizard* will prompt you to specify which recording frame rate to set, and on which cameras. **Note:** Specifying recording frame rate is only possible for MJPEG, a video codec (technology for compressing and decompressing data) with which each frame is separately compressed into a JPEG image. This type of action also requires that recording has been enabled on the cameras to which the action will be linked. You enable recording for a camera on the *Record* tab. The maximum frame rate you will be able to specify will depend on the camera types in question, and on their selected image resolution. **Stop action required:** This type of action requires one or more stop actions. Depending on how the action was triggered, the stop action may be performed either on an event or after a period of time. In one of the subsequent steps of the *Rule Wizard*, the wizard will automatically prompt

Action	Description
	you to specify the stop action *Restore default recording frame rate*. Without this stop action, the default recording frame rate would potentially never be restored. You will also have the option of specifying further stop actions.
Start patrolling on <device> using <profile>	Begins PTZ patrolling (the continuous moving of a camera between a number of preset positions) according to a particular patrolling profile (the exact definition of how patrolling should be carried out, including the sequence of preset positions, timing settings, etc.) for a particular PTZ camera. When selecting this type of action, the *Rule Wizard* will prompt you to select a patrolling profile. Only one patrolling profile on one device can be selected; it is not possible to select several patrolling profiles. **Note:** This type of action requires that the device to which the action will be linked is a PTZ (Pan/Tilt/Zoom) device, and that at least one patrolling profile has been defined for the device. You define patrolling profiles for a PTZ camera on the *Patrolling* tab. **Stop action required:** This type of action requires one or more stop actions. Depending on how the action was triggered, the stop action may be performed either on an event or after a period of time. In one of the subsequent steps of the *Rule Wizard*, the wizard will automatically prompt you to specify the stop action *Stop patrolling*. Without this stop action, patrolling would potentially never stop. You will also have the option of specifying further stop actions.
Pause patrolling on <devices>	Pauses PTZ patrolling (the continuous moving of a camera between a number of preset positions). When selecting this type of action, the *Rule Wizard* will prompt you to specify the devices on which patrolling should be paused. **Note:** This type of action requires that the devices to which the action will be linked are PTZ (Pan/Tilt/Zoom) devices, and that at least one patrolling profile has been defined for those devices. You define patrolling profiles for a PTZ camera on the *Patrolling* tab. **Stop action required:** This type of action requires one or more stop actions. Depending on how the action was triggered, the stop action may be performed either on an event or after a period of time. In one of the subsequent steps of the *Rule Wizard*, the wizard will automatically prompt you to specify the stop action *Resume patrolling*. Without this stop action, patrolling would potentially pause indefinitely. You will also have the option of specifying further stop actions.
Move camera to <preset> position	Moves a particular camera to a particular preset position. When selecting this type of action, the *Rule Wizard* will prompt you to select a preset position. Only one preset position on one camera can be selected; it is not possible to select several preset positions. **Note:** This type of action requires that the devices to which the action will be linked are PTZ (Pan/Tilt/Zoom) devices, and that at least one preset position

Action	Description
	has been defined for those devices. You define preset positions for a PTZ camera on the *Presets* tab. **No compulsory stop action:** This type of action does not require a stop action; although it will be possible to specify optional stop actions to be performed on either an event or after a period of time.
Move to default preset on <devices>	Moves one or more particular cameras to their respective default preset positions. When selecting this type of action, the *Rule Wizard* will prompt you to select which devices the action should apply for. **Note:** This type of action requires that the devices to which the action will be linked are PTZ (Pan/Tilt/Zoom) devices, and that default preset positions have been defined for those devices. You define default preset positions for a PTZ camera on the *Presets* tab. **No compulsory stop action:** This type of action does not require a stop action; although it will be possible to specify optional stop actions to be performed on either an event or after a period of time.
Set device output to <state>	Sets an output on a device to a particular state (activated or deactivated). When selecting this type of action, the *Rule Wizard* will prompt you to specify which state to set, and on which devices. **Note:** This type of action requires that the devices to which the action will be linked each have at least one external output unit connected to an output port. **No compulsory stop action:** This type of action does not require a stop action; although it will be possible to specify optional stop actions to be performed on either an event or after a period of time.
Send notification to <profile>	Sends a notification, using a particular notification profile. When selecting this type of action, the *Rule Wizard* will prompt you to select a notification profile, and which devices to include images from. Only one notification profile can be selected; it is not possible to select several notification profiles. **Tip:** Even though you are only able to select a single notification profile, remember that a single notification profile may contain several recipients. **Note:** This type of action requires that at least one notification profile has been set up. Images will only be included if e-mail notification is used and the *Include images* option has been enabled for the notification profile in question. **No compulsory stop action:** This type of action does not require a stop action; although it will be possible to specify optional stop actions to be performed on either an event or after a period of time.
Make new	Generates an entry in the rule log. When selecting this type of action, the

Action	Description
<log entry>	*Rule Wizard* will prompt you to specify a text for the log entry. **Tip:** When specifying the log text, you will be able to quickly insert variables, such as *$DeviceName$*, *$EventName$*, etc. into the log message wording. **No compulsory stop action:** This type of action does not require a stop action; although it will be possible to specify optional stop actions to be performed on either an event or after a period of time.
Generate alert <alert type>	Generates an alert. Alerts will be 1) logged in the alert log, and 2) selectable (user rights permitting) when browsing recordings in the Ocularis Client Lite. When selecting this type of action, the *Rule Wizard* will prompt you to select an alert. Only one alert can be selected; it is not possible to select several alerts. **Note:** This type of action requires that at least one alert has been defined; see Managing Alerts. **No compulsory stop action:** This type of action does not require a stop action; although it will be possible to specify optional stop actions to be performed on either an event or after a period of time.
Start plug-in on <devices>	Starts one or more plug-ins. When selecting this type of action, the *Rule Wizard* will prompt you to select required plug-ins, and on which devices to start the plug-ins. **Note:** This type of action requires that at one or more plug-ins are available on your system. **No compulsory stop action:** This type of action does not require a stop action; although it will be possible to specify optional stop actions to be performed on either an event or after a period of time.
Stop plug-in on <devices>	Stops one or more plug-ins. When selecting this type of action, the *Rule Wizard* will prompt you to select required plug-ins, and on which devices to stop the plug-ins. **Note:** This type of action requires that at one or more plug-ins are available on your system. **No compulsory stop action:** This type of action does not require a stop action; although it will be possible to specify optional stop actions to be performed on either an event or after a period of time.
Apply new settings on <devices>	Changes device settings. When you select this type of action, the *Rule Wizard* will prompt you to select required devices, and you will be able to define required settings on the devices you have specified. **Note:** If defining settings for more than one device, you will only be able to change settings that are available for all of the specified devices. Example:

Action	Description
	You specify that the action should be linked to Device 1 and Device 2. Device 1 has the settings A, B and C, and Device 2 has the settings B, C and D. In this case, you will only be able to change the settings that are available for both devices, namely settings B and C. **No compulsory stop action:** This type of action does not require a stop action; although it will be possible to specify optional stop actions to be performed on either an event or after a period of time.
Set NetMatrix to view <devices>	Makes video from the selected cameras appear on a computer capable of displaying NetMatrix-triggered video, i.e. a computer on which either a Ocularis Client Lite or the NetMatrix Monitor application is installed. When you select this type of action, the *Rule Wizard* will prompt you to select a NetMatrix recipient, and one or more devices from which to display video on the selected NetMatrix recipient. This type of action lets you select only a single NetMatrix recipient at a time. If you want to make video from the selected devices appear on more than one NetMatrix recipient, you should create a rule for each required NetMatrix recipient. **Tip:** By right-clicking a rule in the *Rules* list you are able to copy and re-use the content of rules. This way you can avoid having to create near-identical rules from scratch. **Note:** As part of the configuration on the NetMatrix recipients themselves, users must specify the port number and password required for the NetMatrix communication. Make sure that the users have access to this information. The users must typically also define the IP addresses of allowed hosts, i.e. hosts from which commands regarding display of NetMatrix-triggered video will be accepted. In that case the users must also know the IP address of the NetEVS Management Server (or any router or firewall used).

How to Create Typical Rules

The following examples provide step-by-step descriptions of how to create a number of rules typically required by NetEVS administrators.

Note: The descriptions are examples only. If you want to base real-life rules on these examples, be prepared to substitute the examples' device names and parameters with device names and parameters relevant to your system. Numerous other rule configurations are possible. If the rule you require is not listed among the examples, it by no means indicates that the rule you require cannot be created in NetEVS.

Basic Rules

- Use Higher Live Frame Rate on Motion
  Ensures that when motion is detected on a specific camera, NetEVS will use a higher than default live frame rate for the camera, and return to using the camera's default live frame rate when motion is no longer detected. The effect is higher quality live video whenever there is motion.

PTZ-Related Rules

- Use Specific PTZ Patrolling Profile During Specific Part of Day
  Ensures the following: During a specific part of the day, a PTZ (Pan/Tilt/Zoom) camera will patrol according to a specific patrolling profile (i.e. a definition of the points between which the PTZ camera should move). When the specified part of the day ends, the PTZ camera will stop patrolling.

- Use Different PTZ Patrolling Profiles for Day/Night
  Ensures the following: During daytime, a PTZ camera will patrol according to a specific patrolling profile. During nights, the PTZ camera will patrol according to another patrolling profile. This requires 2 near-identical rules; one for each patrolling profile. When you have created the first rule, you can make a copy of it, and quickly create the second rule based on the copy. Both rules are covered in this example.

- Pause PTZ Patrolling and Go to PTZ Preset on Input
  Ensures the following: When a specific external input is activated, a PTZ camera will pause its patrolling, move to a specific preset position, and remain at the preset position for a specific period of time, after which it will resume patrolling.

Examples: Basic Rules

Note: The rule described in the following is an example only. If you wish to base a real-life rule on the example, be prepared to substitute the example's device names and parameters with device names and parameters relevant to your system.

This rule ensures the following:

- When motion is detected on a specific camera, NetEVS will use a different live frame rate than the camera's default live frame rate, and return to using the default live frame rate when motion is no longer detected.

  In this example, the camera has a default live frame rate of 10 frames per second (FPS), and the rule will increase the live frame rate to 25 FPS when applied. The effect will be a higher quality live video for as long as motion is detected on the camera.

  Note that recording frame rate (the frame rate with which video sequences will be saved) is specified separately, and will not be affected by this rule.

  Tip: If you want to permanently change the default frame rate for a camera, do not use a rule. Change the camera's default frame rate on the *Settings* tab instead.

  Note: Motion is normally detected by NetEVS when video received from cameras is analyzed. This is the type of motion detection dealt with in this example. However, some cameras are—depending on configuration of the camera hardware—themselves able to detect motion. Such hardware-configurable motion detection can also be used in NetEVS rules, although that is beyond the scope of this example.

Prerequisites

This rule is based on motion detection on a specific camera. Therefore, motion detection must be enabled on the camera in order for the rule to work as intended. Before creating a rule like this, always verify the following:

- Motion detection is enabled for the camera in question.

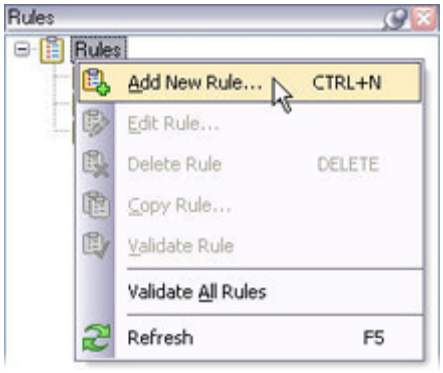
  To verify that motion detection has been enabled for a camera, expand *Devices* in the Management Client's navigation pane, and select *Cameras*. This will display a list of cameras in the overview pane. Select the required camera from the list, and select the *Motion* tab in the properties pane. On the *Motion* tab, verify that the *Enable motion detection* check box is selected.

  Note that other settings on the *Motion* tab, such as *Sensitivity*, will determine what will be interpreted as motion. Merely enabling motion detection may thus not be sufficient to meet your requirements. Time spent on finding the best possible balance of motion detection settings under different conditions (day/night, calm/windy weather, etc.) will help you later avoid unnecessary recordings, etc.

  Note: Motion is typically detected by NetEVS when video received from cameras is analyzed. This is the type of motion detection dealt with in this example. However, some cameras are—depending on configuration of the camera hardware—themselves able to detect motion. Such hardware-configurable motion detection can also be used in NetEVS rules, although that is beyond the scope of this example.

Creating the Rule

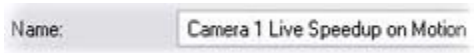
1. In the Management Client's navigation pane, expand *Rules and Alerts*, then right-click *Rules* and select *Add New Rule...*:



Tip: Instead of right-clicking to select *Add New Rule*, you can press CTRL+N on your keyboard.

2. The *Rule Wizard* opens. Type a name for the new rule in the *Rule name* field.

In this example ... the rule will cover a specific camera, Camera 1. We therefore overwrite the default rule name (e.g. *New Rule 001*) with a descriptive name:



Tip: Always use a descriptive name for the rule. Once you have several rules, you will find that descriptive names are a great help when identifying individual rules.

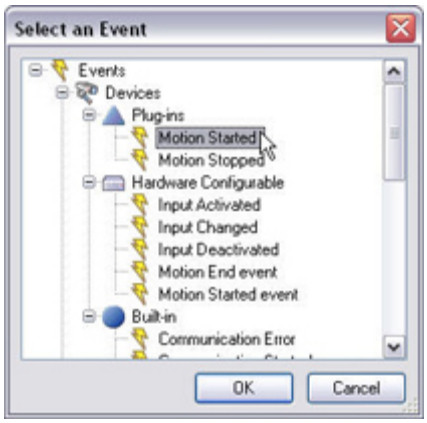
3. On Step 1 of the *Rule Wizard*, select the required rule type.

In this example ... we want to base the rule on an event, namely detected motion. Therefore, we select *Perform an action on <event>*. Our selection is immediately reflected in the initial rule description in the lower half of the wizard window:

4. Click the underlined items in the rule description in order to specify its exact content:

Event link: Clicking the *event* link lets you select the event which must occur in order for the rule to apply. In order for you to get a good overview, selectable events are listed in groups according to whether they are related to plug-ins, dependent on hardware configuration, built into NetEVS itself, etc.

In this example ... we want the event to be detected motion. Motion detection events are technically related to NetEVS's motion detection plug-in, so we go to the *Plug-ins* group, select the event *Motion Start*, and click *OK*:



Devices/recording server/management server link: When you have selected the required event, clicking the *devices/recording server/management server* link opens the *Select Group Members* window, which lets you specify the devices on which device the event should occur in order for the rule to apply.

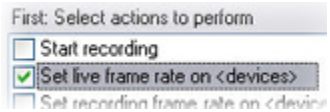
➡**In this example ...** the event should occur on Camera 1 in order for the rule to apply. In the *Select Group Members* window we therefore drag Camera 1 to the *Selected* list and click *OK*. By doing this we have specified the exact content of the first part of the wizard's rule description, which now looks like this:

5. Click the wizard's *Next* button to move to step 2 of the wizard.
6. On step 2 of the wizard, specify which time conditions should be met in order for the rule to apply.

   ➡**In this example ...** we simply want the rule to apply whenever motion is detected on Camera 1, regardless of time. When creating event-based rules it is possible to bypass the time conditions; we therefore want to skip step 2 entirely.

7. Click the wizard's *Next* button to move to step 3 of the wizard.
8. On step 3 of the wizard, first specify which actions to perform.

   ➡**In this example ...** we want to set a specific live frame rate. We therefore select the action *Set live frame rate on <devices>*:



9. Based on the selection of actions, the wizard automatically extends the rule description in the lower part of the wizard window.

   ➡**In this example ...** Based on our selection *Set live frame rate on <devices>*, the wizard automatically suggests a rule description in which the frame rate should be set on *the device on which event occurred*. The wizard furthermore prompts us to specify the required number of frames per second:

Next: Edit the rule description (click an underlined item)
Perform an action on Motion Start
from Camera 1
set live frame rate on the device on which event occurred
to frames per second

To specify the required number of frames per second, we click the *frames per second* link, specify a frame rate of *25*, and click *OK*:

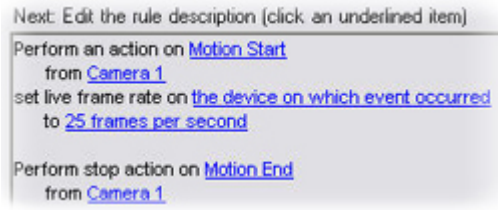
The rule description now indicates that the frame rate will be set to 25 frames per second.

10. Click the wizard's *Next* button to move to step 4 of the wizard.

11. On step 4 of the wizard, select stop criteria. Stop criteria are important in many types of rules. Without a stop criterion, many actions could go on indefinitely once started.

    ➡**In this example ...** Without a stop criterion, the rule in this example would set the frame rate for the camera to 25 FPS indefinitely upon motion detection. Based on the elements in our rule description, the wizard therefore automatically suggests the stop criterion *Perform stop action on <event>*:

Note that the stop criterion *No actions performed on rule end* is not available: a stop criterion **must** be defined for this type of rule. In the rule description, the wizard furthermore automatically suggests that the stop action is performed when motion is no longer detected on Camera 1:

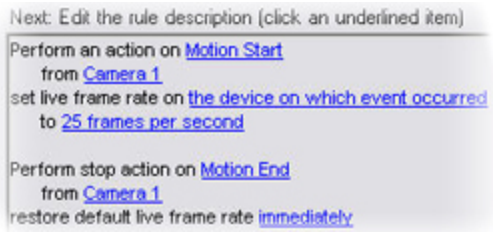

Next: Edit the rule description (click an underlined item)
Perform an action on Motion Start
from Camera 1
set live frame rate on the device on which event occurred
to 25 frames per second
Perform stop action on Motion End
from Camera 1

This is just what we want; we do not need to change any of the wizard's suggestions. However, we still need to define exactly which kind of stop action should take place when motion ends on Camera 1.

12. Click *Next* to move to the next step of the wizard.

13. In this step, the wizard suggests one or more stop actions based on the previously selected start actions.

    ➡**In this example ...** Based on the start action *set frame rate* in our rule description, the wizard automatically suggests the stop action *restore default frame rate*. It furthermore suggests that the default frame rate should be restored immediately after the last detected motion:

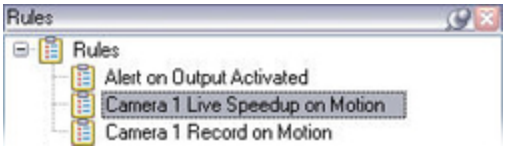

Next: Edit the rule description (click an underlined item)
Perform an action on Motion Start
from Camera 1
set live frame rate on the device on which event occurred
to 25 frames per second
Perform stop action on Motion End
from Camera 1
restore default live frame rate immediately

This is also just what we want; we do not need to change it, although by clicking the *immediately* link we could have specified a delay of e.g. 3 seconds.

14. Your rule is by default active, meaning that once you have created it, it will be applied as soon as the rule's conditions are met. If you do not want the rule to be active straight away, clear the *Active* check box in the top part of the *Rule Wizard* window:

Tip: You can always activate/deactivate the rule later.

15. Click the wizard's *Finish* button. This will add your new rule to the list of rules:



Examples: PTZ-Related Rules

Note: The rule described in the following is an example only. If you wish to base a real-life rule on the example, be prepared to substitute the example's device names and parameters with device names and parameters relevant to your system.

This rule ensures the following:

- During a specific part of a specific day, a specific PTZ (Pan/Tilt/Zoom) camera will patrol according to a specific patrolling profile. A patrolling profile is the exact definition of how patrolling should be carried out, including the sequence for moving between preset positions, timing settings, etc.
- When the specified part of the day ends, the PTZ camera will stop patrolling.

Tip: If, when patrolling stops, you want the PTZ camera to immediately start patrolling according to another patrolling profile, use the principle described in the example *Use Different Patrolling Profiles for Day/Night*.

Prerequisites

When a PTZ camera patrols according to a patrolling profile, it continuously moves between different preset positions. Therefore, the required preset positions and at least one patrolling scheme must be defined for the PTZ camera in question. Before creating a rule like this, always verify the following:

- The camera in question is a PTZ camera
- At least two preset positions are defined for the camera

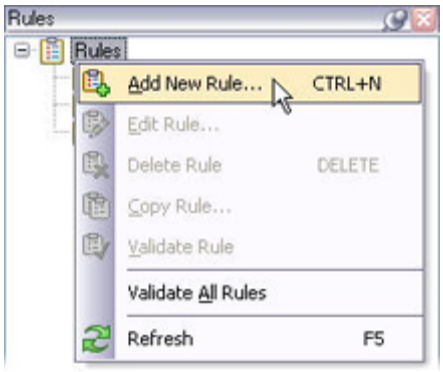
  To define preset positions for a PTZ camera, expand *Devices* in the Management Client's navigation pane and select *Cameras*. In the overview pane, select the required PTZ camera from the list, then select the *Presets* tab in the properties pane. For descriptions of the exact functionality of the *Presets* tab, see Preset Positions.

- At least one patrolling profile is defined for the camera

  To define patrolling profiles for a PTZ camera, expand *Devices* in the Management Client's navigation pane and select *Cameras*. In the overview pane, select the required PTZ camera from the list, then select the *Patrolling* tab in the properties pane. For descriptions of the exact functionality of the *Patrolling* tab, see Patrolling.

Creating the Rule

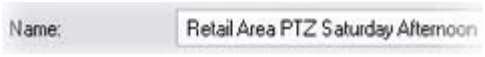
1. In the Management Client's navigation pane, expand *Rules and Alerts*, then right-click *Rules* and select *Add New Rule...*:



   Tip: Instead of right-clicking to select *Add New Rule*, you can press CTRL+N on your keyboard.

2. The *Rule Wizard* opens. Type a name for the new rule in the *Rule name* field.

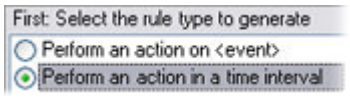
   In this example ... the rule will only cover a specific camera (simply called *PTZ Camera*) and how it should patrol on Saturday afternoons. We therefore overwrite the default rule name (e.g. *New Rule 001*) with a descriptive name:



   Tip: Always use a descriptive name for the rule. Once you have several rules, you will find that descriptive names are a great help when identifying individual rules.

3. On Step 1 of the *Rule Wizard*, select the required rule type.

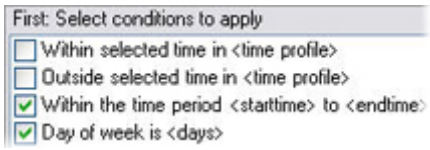
   In this example ... we want to base the rule on a time period. Therefore, we select *Perform an action in a time interval*:



4. Click the wizard's *Next* button to move to the wizard's next step.

5. On the wizard's next step, specify which time conditions should be met in order for the rule to apply.

   ➡**In this example ...** we want the rule to apply between 13.00 and 17.00 on Saturdays, so 2 time conditions are required: one which specifies use of a start time and end time, and one which specifies use on a particular day of the week. We therefore select *Within the time period <start time> to <end time>* and *Day of week is <day>*:

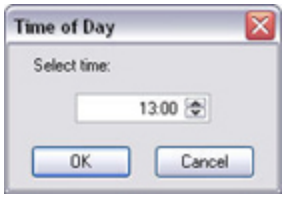
   Our selection is immediately reflected in the initial rule description in the lower half of the wizard window:

   Tip: If we had previously created a suitable time profile covering the required period of time, we could have just selected the time condition *Within selected time in <time profile>*, then pointed to the time profile in question. Read more about time profiles under *Managing Time Profiles*.

6. Click the underlined items in the rule description in order to specify its exact content:

   ***start time*:** Clicking the *start time* link lets you specify required start time.

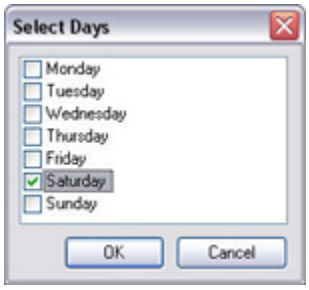
   ➡**In this example ...** we want the start time to be one o'clock in the afternoon, so we specify *13:00*, and click *OK*:

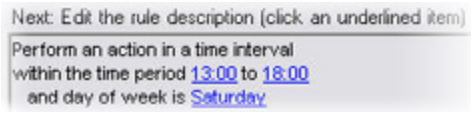
   ***end time*:** The *end time* link works just like the *start time* link. We specify *18.00*.

   ***days*:** Clicking the *days* link lets you specify required days of the week.

   ➡**In this example ...** our rule should only apply on Saturdays, so we select *Saturday*, and click *OK*:



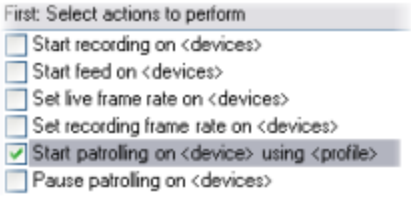
By doing this, we have specified the exact content of the first part of the wizard's rule description, which now looks like this:



7. Click the wizard's *Next* button to move to step 3 of the wizard.

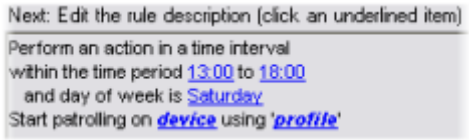
8. On step 3 of the wizard, first specify which actions to perform.

   ➡**In this example ...** we want to start patrolling according to a specific patrolling profile. We therefore select the action *Start patrolling on <device> using <profile>*:

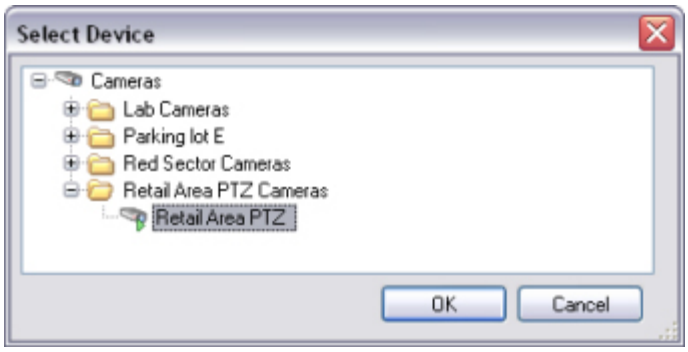


9. Based on the selection of actions, the wizard automatically extends the rule description in the lower part of the wizard window.

   ➡**In this example ...** Based on our selection *Start patrolling on <device> using <profile>*, the wizard automatically prompts us to specify the required camera and patrolling profile:



   We click the *device* link, expand the relevant camera folder, select the required camera, and click *OK*:



Next we click the *profile* link, select the required patrolling profile from our list of previously defined patrolling profiles, and click *OK*:

By doing this, we have further specified the content of the wizard's rule description, which now looks like this:

Next: Edit the rule description (click an underlined item)
Perform an action in a time interval
within the time period 13:00 to 18:00
and day of week is Saturday
Start patrolling on Retail Area PTZ using 'Retail Area Saturday Afternoon'

10. Click the wizard's *Next* button to move to step 4 of the wizard.

11. On step 4 of the wizard, select stop criteria. Stop criteria are important in many types of rules. Without a stop criterion, many actions could go on indefinitely once started.

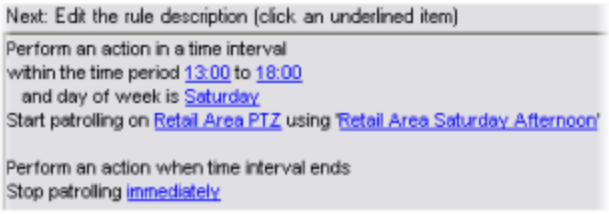
    ➡**In this example ...** Without a stop criterion, the rule in this example would start patrolling within the specified time period, but never stop it. Based on the elements in our rule description, the wizard therefore automatically suggests the stop criterion *Perform stop action when time interval ends*:

    Note that the stop criterion *No actions performed on rule end* is not available: a stop criterion **must** be defined for this type of rule. We still need to define exactly which kind of stop action should take place when the time period ends.

12. Click *Next* to move to the next step of the wizard.

13. In this step, the wizard suggests one or more stop actions based on the previously selected start actions.

    ➡**In this example ...** Based on the start action *start patrolling* in our rule description, the wizard automatically suggests the stop action *Stop patrolling*. It furthermore suggests that patrolling is stopped immediately when the time period ends:

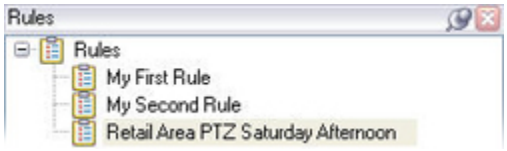
    
    Next: Edit the rule description (click an underlined item)
Perform an action in a time interval
within the time period 13:00 to 18:00
and day of week is Saturday
Start patrolling on Retail Area PTZ using 'Retail Area Saturday Afternoon'
Perform an action when time interval ends
Stop patrolling immediately

    This is just what we want; we do not need to change it, although by clicking the *immediately* link we could have specified a delay of e.g. 60 seconds.

14. Your rule is by default active, meaning that once you have created it, it will be applied as soon as the rule's conditions are met. If you do not want the rule to be active straight away, clear the *Active* check box in the top part of the *Rule Wizard* window:

    Tip: You can always activate/deactivate the rule later.

15. Click the wizard's *Finish* button. This will add your new rule to the list of rules:

This requires 2 nearly identical rules; one for each patrolling profile. When you have created the first rule, you can make a copy of it, and quickly create the second rule based on the copy.

Note: Both rules are covered in this example. The rules described in the following are examples only. If you wish to base real-life rules on the examples, be prepared to substitute the examples' device names and parameters with device names and parameters relevant to your system.

These rules ensure the following:

- During daytime, a specific PTZ camera will patrol according to a specific patrolling profile. In this example *daytime* is defined by a time profile covering the period between 08.00 and 20.00 on all days of the week.

- During nights, the PTZ camera will patrol according to another patrolling profile. In this example *nights* are defined as periods not covered by the *daytime* time profile.

Prerequisites

This rule is based on a PTZ camera being able to patrol according to 2 different patrolling profiles, and a time profile being used to determine which patrolling profile should be used. Before creating a rule like this, always verify the following:

- You have specified a time profile covering at least one of the time periods you want to differentiate between. You could specify time profiles covering both time periods, but it will not be necessary since rules can be set up to apply *within* as well as *outside* a time profile.

  To specify a time profile, expand *Rules and Alerts* in the Management Client's navigation pane, then select *Time Profiles*. The *Time Profiles* list will appear. In the *Time Profiles* list, right-click *Time Profiles*, and select *Add New Time Profile...* For detailed information about specifying time profiles, see Managing Time Profiles.

- The camera in question is a PTZ camera.

- Preset positions and at least 2 patrolling profiles are defined for the camera.

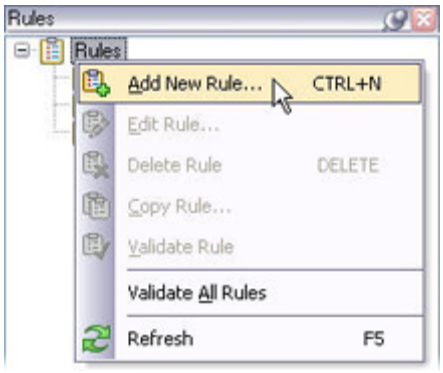
  When a PTZ camera patrols according to a patrolling profile, it moves between a number of preset positions. Thus, before you able to define patrolling profiles for a PTZ camera, the preset positions required for the patrolling profiles must be defined.

  To define preset positions for a PTZ camera, expand *Devices* in the Management Client's navigation pane and select *Cameras*. This will display a list of cameras in the overview pane. Select the required PTZ camera from the list, and select the *Presets* tab in the properties pane. For details of how to define preset positions on the *Presets* tab, see Preset Positions.

  Once you have defined the required preset positions, patrolling profiles for the PTZ camera are defined on the neighboring *Patrolling* tab. For details of how to define patrolling profiles on the *Patrolling* tab, see Patrolling.

Creating the First Rule; Patrolling During Daytime

1. In the Management Client's navigation pane, expand *Rules and Alerts*, then right-click *Rules* and select *Add New Rule...*:



   Tip: Instead of right-clicking to select *Add New Rule*, you can press CTRL+N on your keyboard.

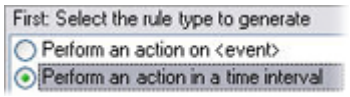
2. The *Rule Wizard* opens. Type a name for the new rule in the *Rule name* field.

➡**In this example ...** the rule will cover a specific camera and how it should patrol during daytime. We therefore overwrite the default rule name (e.g. *New Rule 001*) with a descriptive name:

Tip: Always use a descriptive name for the rule. Once you have several rules, you will find that descriptive names are a great help when identifying individual rules.

3. On Step 1 of the *Rule Wizard*, select the required rule type.

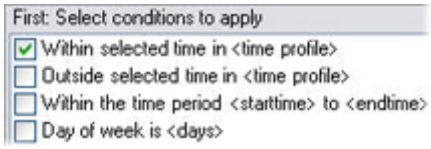
   ➡**In this example ...** we want to base the rule on a time period. Therefore, we select *Perform an action in a time interval*:

4. Click the *Next* button to go to step 2 of the wizard.

5. On step 2 of the wizard, specify which time conditions should be met in order for the rule to apply.

   ➡**In this example ...** we want the rule to apply within a specific time profile, so we select the time condition *Within selected time in <time profile>*:

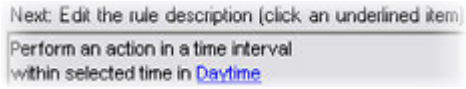
   

   Based on our selection, the wizard prompts us to specify the required time profile in the rule description:

6. Click the underlined item to specify the exact content of the rule description.

   ➡**In this example ...** we click the *time profile* link, select the time profile *Daytime*, and click *OK*:

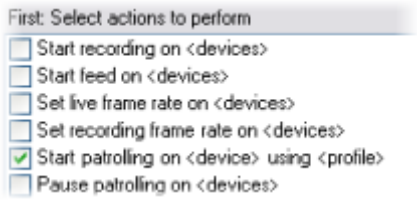
   The rule description now reflects our selection:

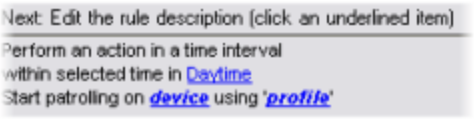
7. Click the wizard's *Next* button to move to step 3 of the wizard.

8. On step 3 of the wizard, first specify which actions to perform.

   ➡**In this example ...** we want patrolling according to a specific patrolling profile. We therefore select the action *Start patrolling on <device> using <profile>*:

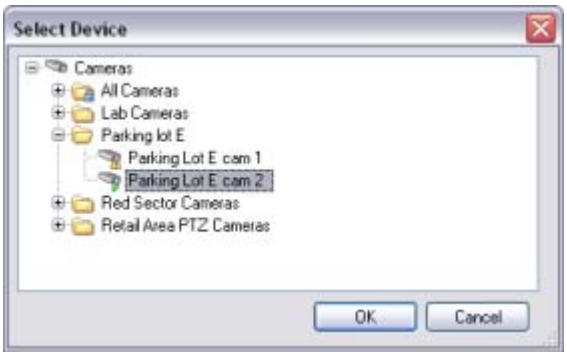
   

   Based on the selection of actions, the wizard extends the rule description, and prompts us to specify the required device and patrolling profile:

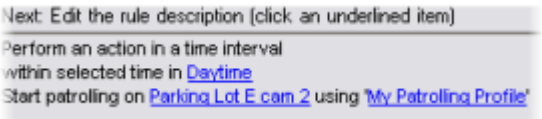
9. Click the underlined items in the extension of the rule description in order to specify their exact contents:

   ➡**In this example ...** we first click the *device* link and in the *Select device* dialog opening we select a device and click *OK*:

   Then we click the *profile* link and select a patrolling profile in the dialog opening and then click *OK*.

   The rule description now reflects our selection:

10. Click the wizard's *Next* button to move to step 4 of the wizard.

11. On step 4 of the wizard, select stop criteria.

    Stop criteria are important in many types of rules. Without a stop criterion, many actions could go on indefinitely once started.

    ➡**In this example ...** Without a stop criterion, the rule in this example would make the PTZ camera start patrolling according to the selected patrolling profile, but it would never stop. Based

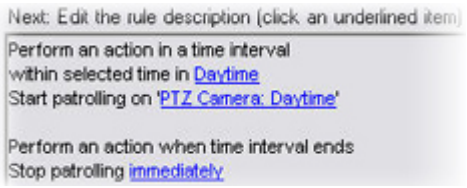
on the elements in our rule description, we therefore **must** select a stop criterion. Since our rule is triggered when a time period starts, the wizard automatically suggests that stop action is performed when the time period ends:

The suggestion is also reflected in the rule description. However, we still need to specify exactly which stop action we want performed.

12. Click *Next* to move to the next step of the wizard.

13. In this step, the wizard suggests one or more stop actions based on the previously selected start actions.

    ➡**In this example ...** Based on the start action *start patrolling* in our rule description, the wizard automatically suggests the stop action *stop patrolling*. It furthermore suggests that patrolling is stopped immediately when the time period ends:


Next: Edit the rule description (click an underlined item)
Perform an action in a time interval
within selected time in Daytime
Start patrolling on 'PTZ Camera: Daytime'
Perform an action when time interval ends
Stop patrolling immediately

    This is exactly what we want; we do not need to change it.

14. Your rule is by default active, meaning that once you have created it, it will be applied as soon as the rule's conditions are met.

    If you do not want the rule to be active straight away, clear the *Active* check box in the top part of the *Rule Wizard* window:

    Tip: You can always activate/deactivate the rule later.

15. Click the wizard's *Finish* button. This will add your new rule to the list of rules:

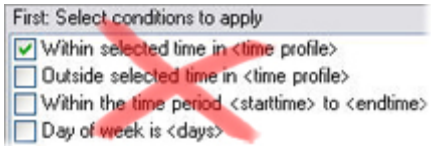
Creating the Second Rule; Patrolling During Nighttime

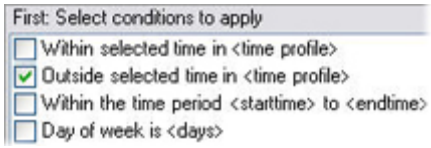
Tip: You do not have to create the second rule from scratch; you can make a copy of the first rule, then change it. To copy a rule, select the rule in the *Rules* list, right-click, and select *Copy Rule...* This will open the *Rule Wizard*, which will display an editable copy of the rule.

1. Copy the first rule, then make the following changes to the rule:

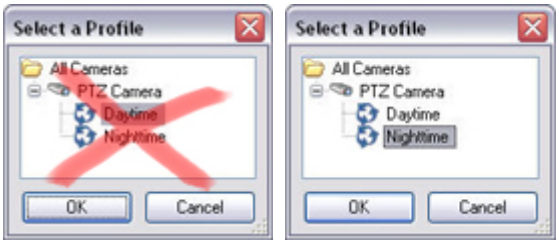
    - Change the rule name so it better describes the new rule, for example to *PTZ Camera Nighttime Patrolling*.

    - On the time conditions selection step, select that the rule should apply not within but *outside* the time profile:





    - In the rule description, click the link in the sentence *Start patrolling on ...*, and select a patrolling profile matching your *nighttime* requirements rather than your daytime requirements:



2. Click the wizard's *Finish* button.

Note: The rule described in the following is an example only. If you wish to base a real-life rule on the example, be prepared to substitute the example's device names and parameters with device names and parameters relevant to your system.

This rule ensures the following:

- When a specific external input is activated, a PTZ camera will pause its patrolling, move to a specific preset position, and remain at the preset position for a specific period of time, after which it will resume patrolling.

    In this example, we assume that patrolling has already been set up for the PTZ camera, and that the external input unit is a door sensor connected to an input port on a device on the NetEVS system: When the door sensor is activated, the PTZ camera will pause patrolling, move to a preset position covering the door area, remain at the preset position for 15 seconds, then resume patrolling.

Prerequisites

This rule is based on an input being activated, and on a patrolling PTZ camera moving to a specific preset position. Therefore, an external input unit must be available, i.e. connected to the input port of a device on the NetEVS system. Furthermore, the preset position to which the PTZ camera should move when the rule is applied must have been defined. Before creating a rule like this, always verify the following:

- An external input unit is successfully connected to an input port on a device, and the states of the input unit (activated/deactivated) work as required.
- The camera in question is a PTZ camera with the required preset positions and patrolling defined.

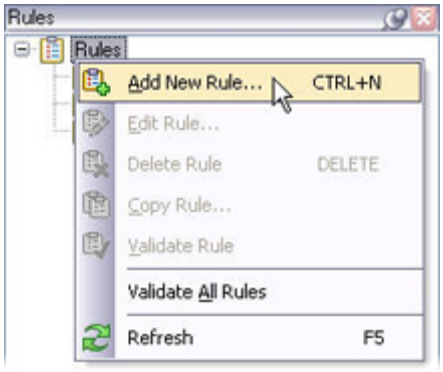
  When a PTZ camera patrols according to a patrolling profile, it moves between a number of preset positions. Thus, before you are able to define patrolling profiles for a PTZ camera, the preset positions required for the patrolling profiles must be defined.

  To define preset positions for a PTZ camera, expand *Devices* in the Management Client's navigation pane and select *Cameras*. In the overview pane, select the required PTZ camera from the list, then select the *Presets* tab in the properties pane. For details of how to define preset positions on the *Presets* tab, see Preset Positions.

  Once you have defined the required preset positions, patrolling profiles for the PTZ camera are defined on the neighboring *Patrolling* tab. For details of how to define patrolling profiles on the *Patrolling* tab, see Patrolling.

Creating the Rule

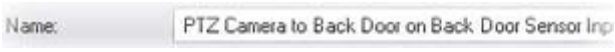
1. In the Management Client's navigation pane, expand *Rules and Alerts*, then right-click *Rules* and select *Add New Rule...*:



   Tip: Instead of right-clicking to select *Add New Rule*, you may simply press CTRL+N on your keyboard.

2. The *Rule Wizard* opens. Type a name for the new rule in the *Rule name* field.

   In this example ... the rule will cover a specific camera (simply called *PTZ Camera*) and how it should behave upon an activated input. We therefore overwrite the default rule name (e.g. *New Rule 001*) with a descriptive name:



   Tip: Always use a descriptive name for the rule. Once you have several rules, you will find that

descriptive names are a great help when identifying individual rules.

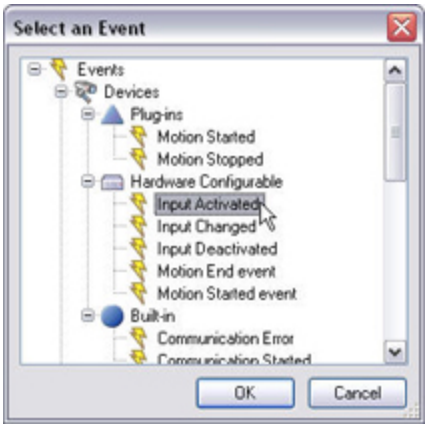
3. On Step 1 of the *Rule Wizard*, select the required rule type.

   ➡**In this example ...** we want to base the rule on an event. Therefore, we select *Perform an action on <event>*. Our selection is immediately reflected in the initial rule description in the lower half or the wizard window:

4. Click the underlined items in the rule description in order to specify its exact content:

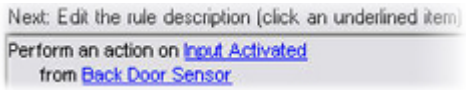
   Event link: Clicking the *event* link lets you select the event which must occur in order for the rule to apply. In order for you to get a good overview, selectable events are listed in groups according to whether they are related to plug-ins, dependent on hardware configuration, built into NetEVS itself, etc.

   ➡**In this example ...** we want the event to be activated input. Input comes from—and is configured on—separate hardware rather than on NetEVS itself, so we go to the *Hardware Configurable* group, select the event *Input Activated*, and click *OK*:

   Devices/recording server/management server link: When you have selected the required event, clicking the *devices/recording server/management server* link opens the *Select Devices and Groups* window, which lets you specify the devices on which the event should occur in order for the rule to apply.

   ➡**In this example ...** the event should occur on an input called *Back Door Sensor* in order for the rule to apply. In the *Select Devices and Groups* window we therefore drag the input *Back Door Sensor* to the *Selected* list and click *OK.* By doing this we have specified the exact content of the first part of the wizard's rule description, which now looks like this:

5. Click the wizard's *Next* button to move to step 2 of the wizard.

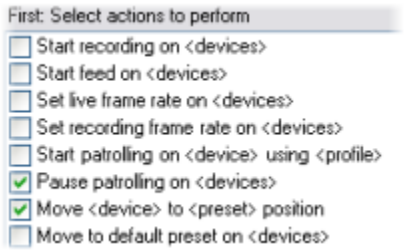
6. On step 2 of the wizard, specify which time conditions should be met in order for the rule to apply.

➡**In this example ...** we simply want the rule to apply whenever input is activated on the back door sensor, regardless of time. When creating event-based rules it is possible to bypass the time conditions; we therefore want to skip the wizard's step 2 entirely.

7. Click the wizard's *Next* button to move to step 3 of the wizard.

8. On step 3 of the wizard, first specify which actions to perform.

   ➡**In this example ...** we want to 2 things to happen: patrolling should pause, and the PTZ camera should move to a specific preset position. We therefore select the actions *Pause patrolling on <devices>* and *Move device to <preset> position*:

   Based on the selection of actions, the wizard automatically extends the rule description in the lower part of the wizard window.

   ➡**In this example ...** Based on our selections *Pause patrolling on <devices>* and *Move camera to <preset> position*, the wizard automatically suggests an extension to the existing rule description:

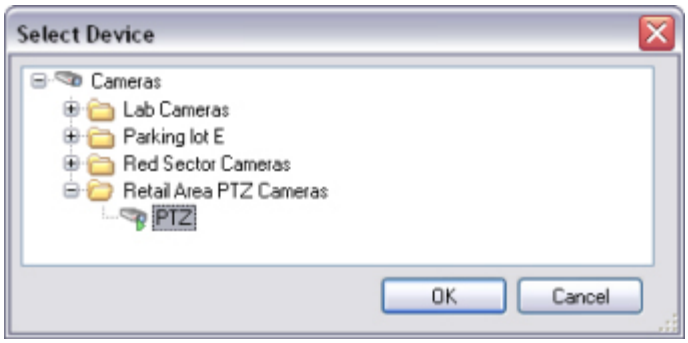
9. Click the underlined items in the extension of the rule description in order to specify its exact content:

   ***devices*:** Clicking the *devices* link lets you select the devices on which patrolling should be paused. Only PTZ cameras will be selectable.

   ➡**In this example ...** patrolling should be paused on our PTZ camera. In the *Select Group Members* window we therefore drag *PTZ Camera* to the *Selected* list and click *OK.*

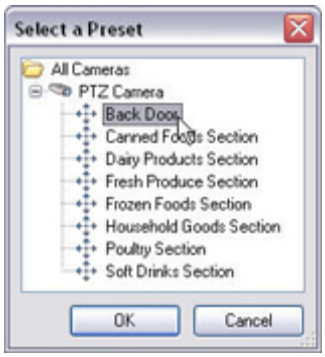
   ***device*:** Clicking the *device* link lets you select to move another device than the device(s) on which patrolling was paused. You are also able to select to move the device on which patrolling was paused.

   ➡In this example ... we select to move the same PTZ camera on which patrolling was paused, and click *OK*:



***preset*:** Clicking the *preset* link lets you select which preset position the PTZ camera should move to. You will be able to select from a list of preset positions defined for the PTZ camera you selected before.

➡**In this example ...** we select a preset position called *Back Door*, and click *OK*:



***immediately*:** The wizard automatically suggests that the camera moves to the preset position *immediately* after it has paused patrolling. Clicking the immediately link lets you specify a delay, if required.

➡**In this example ...** the wizard's suggestion *immediately* suits us fine, so we simply leave it as it is.

The rule description now indicates which camera will pause patrolling, which preset position it will move to, and how soon:

Next: Edit the rule description (click an underlined item)
Perform an action on Input Activated
from Back Door Sensor
Pause patrolling on 'PTZ Camera'
and Move camera immediately to position: 'PTZ Camera: Back Door'

10. Click the wizard's *Next* button to move to step 4 of the wizard.

11. On step 4 of the wizard, select stop criteria.

    Stop criteria are important in many types of rules. Without a stop criterion, many actions could go on indefinitely once started.

    ➡**In this example ...** Without a stop criterion, the rule in this example would make the camera pause patrolling, then move to the preset position and remain there indefinitely. Based on the elements in our rule description, we therefore **must** select a stop criterion.

Since our rule is triggered by an event, the wizard automatically suggests that we base our stop action on an event as well. In the rule description, the wizard even suggests that the stop action is performed when input is deactivated on the back door sensor. However, we want something different, so we select *Perform stop action after <time>*:

In the rule description, the wizard now prompts us to specify the required time:

Next: Edit the rule description (click an underlined item)
Perform an action on Input Activated
from Back Door Sensor
Pause patrolling on 'PTZ Camera'
and Move camera immediately to position: 'PTZ Camera: Back Door'
Perform action time
Resume patrolling immediately

We click the *time* link, specify *15* seconds, and click *OK*:

Based on the start action *pause patrolling* in our rule description, the wizard automatically suggests the stop action *resume patrolling*. It furthermore suggests that patrolling is resumed immediately after the 15 second pause:

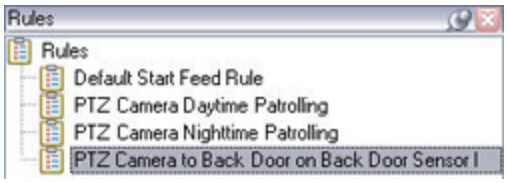
Next: Edit the rule description (click an underlined item)
Perform an action on Input Activated
from Back Door Sensor
Pause patrolling on 'PTZ Camera'
and Move camera immediately to position: 'PTZ Camera: Back Door'
Perform action 15 seconds after
Resume patrolling immediately

This is exactly what we want; we do not need to change it, although by clicking the *immediately* link we could have specified a delay of e.g. 3 seconds.

14. Your rule is by default active, meaning that once you have created it, it will be applied as soon as the rule's conditions are met. If you do not want the rule to be active straight away, clear the *Active* check box in the top part of the *Rule Wizard* window:

Tip: You can always activate/deactivate the rule later.

15. Click the wizard's *Finish* button. This will add your new rule to the list of rules:


Rules
Rules
Default Start Feed Rule
PTZ Camera Daytime Patrolling
PTZ Camera Nighttime Patrolling
PTZ Camera to Back Door on Back Door Sensor I

SMTP Mail Server

You are able to specify settings for the outgoing SMTP mail server you are going to use with your NetEVS system. Specifying these settings is a prerequisite for using rule-triggered notification profiles to send out e-mail notifications on events, etc.

1. Go to the Management Client's menu bar, and select *Tools* > *Options...*

2. In the *Options* window, select the *Mail Server* tab:

3. Specify the following:

   - ***Sender e-mail address*:** Type the e-mail address you want to appear as the sender of e-mail notifications for all notification profiles. Example: sender@organization.org.

   - ***Outgoing mail (SMTP) server name*:** Type the name of the SMTP mail server which will be used for sending e-mail notifications for all notification profiles. Example: mailserver.organization.org.

   Furthermore, if the SMTP mail server requires login, select *Server requires login*, and type the required user name and password.

4. Click *OK*.

Tip: When you add new notification profiles, you will be able to send test e-mails and thus verify that your SMTP mail server settings are correct.

Speakers

On many devices you are able to attach external loudspeakers; some devices even have built-in speakers.

Devices' speakers are automatically detected when you add the devices to your NetEVS system through the Management Client's Hardware Detection Wizard, regardless of which of the wizard's detection options you use. Speakers do not require separate licenses; you can use as many speakers as required on your system.

You can use speakers completely independently of cameras.

Who is able to talk through speakers? Users of Ocularis Client Lite can—provided speakers are available, and the users have the rights to use them—click a button to talk through speakers. Roles determine users' right to talk through speakers. You cannot talk through speakers from the Management Client.

What happens if 2 users want to speak at the same time? Roles determine users' right to talk through speakers. As part of the roles definition, you are able to specify a speaker priority from very high to very low. If 2 users want to speak at the same time, the user whose role has the highest priority will win the ability to speak. If 2 users with the same role want to speak at the same time, the first-come first-served principle applies.

Tip: NetEVS comes with a default rule which ensures that audio feeds from all connected microphones and speakers are automatically fed to the NetEVS system. Like other rules, the default rule can be deactivated and/or modified as required.

Read more about speaker management through the Management Client in Managing Speakers.

IMPORTANT: Although what is being said through a speaker can be recorded and archived, there is currently no way of playing back or exporting such recorded outgoing audio. Features for playing back and exporting recorded outgoing audio will be available in subsequent releases as soon as possible.

You have two entry points for managing speakers:

- In the Management Client's navigation pane, expand *Devices*, select *Speakers*, expand the required device group, and select the required speaker. If no device groups are available, you must first group your speakers: See Using Device Groups for information about creating groups as well as adding speakers to your groups.

- In the Management Client's navigation pane, expand *Servers* and select *Recording Servers.* In the overview pane, expand the required recording server and select the required speaker.

Note: Check the OnSSI website to verify that speakers are supported for the devices and firmware used.

- #### Enabling Speakers

  When speakers are detected with the Hardware Detection Wizard, they are by default disabled. You can enable speakers when needed. If a device has several speakers you can enable one, some, or all of them as required.

  1. In the navigation pane, expand *Servers* and select *Recording Servers*.

  2. In the overview pane, expand the relevant recording server, and find the device on which the speaker is placed.

  3. Right-click the required speaker, and select *Enabled*.

Note: On some devices, a speaker can also be enabled/disabled on the device itself, typically through the device's own configuration web page. If a speaker does not work after enabling it in the Management Client, you should thus verify whether the problem may be due to the speaker being disabled on the device itself.

- ## Configuring Individual Speakers

  Configure individual speakers by selecting the required speaker in the list, then specifying the speaker's required settings on the tabs in the *Properties* pane:

  - The *Info* tab for managing the selected speaker's name, etc.
  - The *Settings* tab for managing the selected speaker's general settings.
  - The *Record* tab for managing the selected speaker's recording and database storage settings.
  - The Archiving for managing the selected speaker's archiving settings. Archiving is the automatic transfer of recordings from the speaker's default database to another location. This way, the amount of recordings you are able to store will not be limited by the size of the speaker's default database. Archiving also makes it possible to back up your recordings on backup media of your choice.

- ## Viewing the Current State of a Speaker

  When you have selected a speaker in the Management Client, information about the current status of the selected speaker is presented in the preview pane.

  When a speaker is not active, it is shown as:

  When the speaker active, it is shown as:

- ## Speaker List's Status Icons

  The following icons are used to indicate the status of each speaker:

  ***Speaker is enabled*:** An enabled speaker can communicate with the recording server, and can if required be started/stopped automatically through a rule.

  ***Speaker is being recorded*:** Note that what is being said through the speaker can be recorded, but cannot subsequently be played back or exported (for example to prove that a warning was given).

  Speaker is communicating with NetEVS.

***Speaker is temporarily stopped or has no feed*:** Often shown when the speaker is communicating with NetEVS while the speaker is being disabled or enabled. Also shown if the *Default Start Audio Feed Rule* is not active; see Managing Rules.

***Speaker is disabled*:** A disabled speaker cannot be started automatically through a rule and will not be able to communicate with the recording server.

Speaker requires attention

Status unknown

Note that some icons may be combined, as in this example where *Speaker is enabled* is combined with *Speaker is being recorded* (since a speaker being recorded is also an enabled speaker).

Database Management

Manage the databases of individual cameras, microphones and speakers through the *Database Configuration Wizard*. The wizard conveniently guides you through the processes of emptying or moving databases.

Note: Recordings will only be saved in the databases when recording is enabled and recording-related rule criteria are met.

To manage a database, select the required camera, microphone or speaker in the Management Client's overview pane, then select the *Record* tab in the properties pane. On the *Record* tab, click the *Database Wizard...* button to open the *Database Configuration Wizard*. When you open the *Database Configuration Wizard* this way, it lets you select between two options: empty or move the database.

Database Configuration Wizard, displaying database management options

Tip: The *Database Configuration Wizard* lets you select different options if opened while working with a recording server; see *Recording Server Database Management*.

- ### Empty Database for Device

  To empty the database of the selected camera, microphone or speaker, do the following in the *Database Configuration Wizard*:

  1. On the wizard's first step, select *Empty databases for device*, and click *Next*.
  2. On the second step of the wizard, select the check boxes next to the databases you want to empty:

     Then click *Next*.
  3. In order to prevent accidental data deletion, you will be asked to confirm that you want to permanently delete all media data for the device in question.

     If you are sure, click *Yes*.
  4. The database will be emptied. A bar displays how the emptying job progresses:

When the emptying job is complete, you will be informed whether the job was successful or whether it failed. If the job failed, you will be able view a status message indicating what caused the failure.

Example: Indication of successful emptying job

Example: Indication of failed emptying job, with link to status message

5. Click *Finish*.

- ## Move Database for Device

If several storage areas exist on the recording server on which the selected camera, microphone or speaker belongs, you are able to move the database to another storage area. Moving the database will not affect its content, and you will be still able to record during the move.

IMPORTANT: Before moving a database, make sure sufficient free space is available at the new storage area. This is especially important if moving a large database, since the moving process may take time, and the database may become even larger if the database must store new recordings during that time. As a rule of thumb, sufficient free space means *at least* the size of the database (allowing for the fact that it may grow) plus 500 MB. If sufficient free space is not available at the new storage drive, you risk data being deleted. The wizard described in the following helps you determine database and storage area sizes.

Tip: A recording server's storage areas can be managed through the *Database Configuration Wizard* when the wizard is opened while working with a recording server; see Recording Server Database Management.

To move the database of the selected camera, microphone or speaker, do the following in the *Database Configuration Wizard*:

1. On the wizard's first step, select *Move database for device*, and click *Next*.

2. On the second step of the wizard, select the required storage area:

Selecting required storage area; note that the *Include media data* box is selected by default

Make absolutely sure that the new storage area has enough free space to accommodate the database: Compare the *Used* column (which displays the current size of the database) with the *Free* column (which displays the current amount of free space in the destination storage area). See also the IMPORTANT note in the previous.

Then, make sure the required database is selected in the *Include media data* column (if check box is not selected, only the database structure, not its content, will be moved), and click *Next*.

3. The database will be moved. A bar displays how the beginning of the moving job progresses:

You will be informed whether the job has begun successfully or whether it has failed. If the job failed, you will be able to view a status message indicating what caused the failure.

Example: Indication of successful beginning of a moving job

Example: Indication of failed moving job, with link to status message

Note that the status *Success* only indicates that the moving job has begun successfully, not that the job is complete. Moving of large databases may take considerable time.

Tip: You can follow the further progress of the moving job by looking at the *Database Configuration* information on the Record tab for the device in question.

4. Click *Finish*.

Tip: Protect your databases! Databases may become corrupted if the recording server is shut down abruptly, for example due to a power failure or similar. See Protecting Databases from Corruption for useful information about how to avoid corrupt databases.

Info

The Info tab lets you view and edit basic information about a selected speaker. The Info tab contains the following fields:

- **Name:** Name of the speaker. The name will be used whenever the speaker is listed in NetEVS and access clients. A name is not compulsory, but highly recommended. The name does not have to be unique.

  To change the name, overwrite the existing name and click the *Save* button in the Management Client's toolbar.

  Tip: If you change the name, it will be updated throughout NetEVS. This means that if the name is used in, for example, a rule, the name will automatically change in the rule as well.

- **Description:** Description of the speaker. A description is not compulsory. The description will appear in a number of listings within NetEVS. For example, the description will appear when pausing the mouse pointer over the speaker's name in the Management Client's overview pane. To specify a description, type the description and click the *Save* button in the Management Client's toolbar.

- **Hardware name:** Name of the hardware with which the speaker is connected. The field is non-editable. However, the hardware name can be changed by clicking the *Go To* button next to the field. Clicking the *Go To* button will take you to the hardware information, where the name is editable.

- **Unit number:** Non-editable field, displaying the unit on which the speaker is attached on the hardware.

Settings

The *Settings* tab lets you verify or edit basic settings for a selected speaker, or for all speakers within a selected device group. However, if the selected device group contains 400 speakers or more the *Settings* tab is unavailable for viewing and editing because changing settings for so many devices in one step takes too long time.

Note: Content of the *Settings* tab may vary depending on the types of speakers selected.

The content of the *Settings* tab is displayed in a table, in which the first column lists the available settings, and the second column lists the value of each setting.

You are typically able to change values; when you have changed a setting to a non-default value, the value will appear in **bold**. When a value must be within a certain range, for example between 0 and 100, the allowed range will be displayed in the information box below the settings table.

- ### Specifying Common Settings for All Speakers in a Device Group

  If using device groups (see Managing Speakers), you are able to quickly specify common settings for all speakers within a given device group:

  1. In the speaker list in the Management Client's overview pane, click the required device group.

     On the *Settings* tab, all settings *which are common to all of the device group's speakers* will be listed. Depending on the amount and type of speakers in the device group, the list may only contain a few settings. If the device group contains more than 400 speakers the *Settings* tab is unavailable for viewing and editing because changing settings for so many devices in one step takes too long time.

     You are now able to verify or change the common settings.

  2. If required, you are able to specify settings for the device group's individual speaker types as well. From the menu above the settings list, select the required type of speaker to verify or change the settings of the selected type of speaker.

  3. If you have made changes to the settings, save your changes by clicking the *Save* button in the Management Client's toolbar:

Recording

The *Record* tab lets you specify recording and storage settings for the selected speaker. Speakers' recording and storage settings are completely independent of cameras and microphones.

Note: Recordings of what is being said through a speaker will only be saved in the speaker's database when recording is enabled and recording-related rule criteria are met.

IMPORTANT: Although what is being said through a speaker can be recorded and archived, there is currently no way of playing back or exporting such recorded outgoing audio. Features for playing back and exporting recorded outgoing audio will be available in subsequent releases as soon as possible.

- ### Enabling and Disabling Recording

  Recording is by default enabled. To enable/disable recording for the selected speaker, select/clear the *Record* tab's *Enable recording* check box.

  Note: Recording must be enabled for the speaker before you are able to record (i.e. save) audio from the speaker. A rule specifying that outgoing audio from the speaker should be recorded under particular circumstances will not work if recording is disabled for the speaker in question.

- ### Recording Settings

  Prebuffering is essentially the ability to save audio in the speaker's database before the initial boundaries of a recording. Use of prebuffering in this context can occasionally be advantageous: It allows you to save audio from *before* the events or times used to start recordings.

  Note: Unlike video and incoming audio, which NetEVS continuously receives from connected cameras and microphones, outgoing audio is only transmitted when Ocularis Client Lite users press a button to talk through speakers. This can, depending on which events or times are used to start recordings, mean that there will be very little or no outgoing audio available for prebuffering.

  The following example illustrates how prebuffered audio is added to a recording:

  This is the stream received by NetEVS:

These are the initial boundaries of a recording, as defined, for example, by start and stop events:

However, a rule specifies that recording should start 5 seconds prior to the start event, so 5 seconds of prebuffered audio is added:

This is what is actually recorded:

Enabling and Disabling Prebuffering

Prebuffering is by default enabled; with a prebuffer size of 3 seconds. To enable/disable prebuffering, select/clear the *Enable prebuffering* check box. When enabling, remember to specify a prebuffer size.

Specifying Prebuffer Size

Select or type the required prebuffer size (in seconds) in the *Prebuffer size* box. Clicking the *Prebuffer size* box' up/down arrows will increase/reduce the value in increments of 1 second. The number of seconds you specify in the *Prebuffer size* box must be sufficiently large to accommodate your requirements.

Using Prebuffering in Rules

The use of prebuffering enables you to create rules specifying that recording should begin prior to the event or time triggering the rule.

- ### Maximum Storage Limits

  The *Record* tab's *Maximum storage limits* specify how long recordings are kept in the database for. Note that adjusting the *Maximum storage limits* has an impact on any archiving you may have set up. See About Archiving for more information.

  Tip: With archiving, you are able to store recordings beyond the maximum limits of the camera's database.

  For the speaker's database, you are able to specify a maximum time limit (e.g. 1 day) as well as a maximum database size limit (e.g. 2 gigabytes). Whichever of the 2 limits is reached first will apply.

  - ### Specifying a Maximum Storage Time Limit

    To specify a maximum time limit, select or type the required values in the *Time period* boxes (*Days*, *Hours* and *Minutes*).

    Clicking the *Time period* boxes' up/down arrows will increase/reduce the value in increments of 1 day/hour/minute respectively.

- ### Specifying a Maximum Storage Size Limit

  By default, the maximum size of a speaker's database is 5 GB. To specify a different maximum database size limit, select or type the required value (in gigabytes) in the *Size* box.

  Tip: The value in the *Size* box is shown with 2 decimals. By selecting the number before or after the separator, you are able to increase/reduce the numbers in increments of one unit. This way you are able to specify a very specific maximum database size, for example of 4.13 gigabytes.

IMPORTANT: In order to prevent operating system failures due to insufficient disk space, the oldest records in the database will automatically be deleted for all cameras, microphones and speakers recording on the disk in question when less than 500 MB of space is left on the disk containing the database, regardless of any time or size limits specified for the databases. This will help ensure that at least 500 MB of disk space will be available for operating system use, and by using archiving you are able to store recordings beyond the maximum limits of the databases.

- ### Database Configuration

  The *Record* tab's *Database configuration* section displays information about the database used for the speaker:

  - #### Database Configuration Section's Fields

    - ***Database Name*:** Non-editable field, displaying the name of the database used for the speaker.
    - ***Database Path*:** Non-editable field, displaying the path to the database used for the speaker.
    - ***Used Space*:** Non-editable field, displaying the current size of the database for the speaker.

  - #### Database Wizard

    The *Database Configuration* section features a *Database Wizard...* button.

    Clicking the *Database Wizard...* button will start the *Database Configuration Wizard*, with which you are able to quickly and conveniently empty or move the database for the speaker.

Archiving

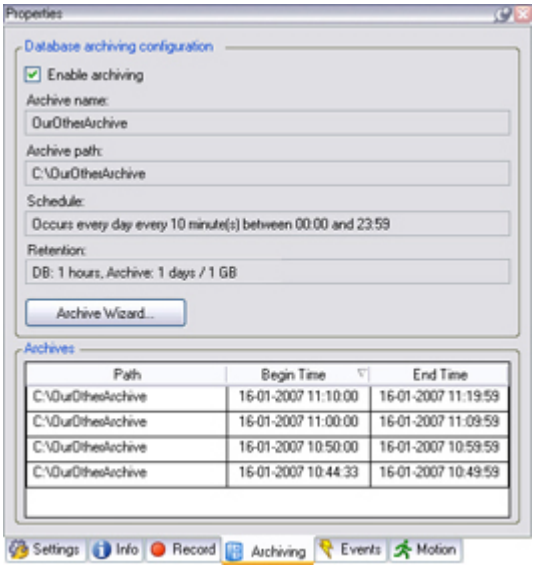
You are able to view and manage the archiving settings of a selected speaker on the *Archiving* tab.

Note: Being able to manage a speaker's archiving settings requires that one or more archives have been defined on the recording server to which the speaker belongs. See About Archiving for more information.

Note: Another tab called *Archiving* will be displayed if you view the properties of a recording server; this is where you create and manage the recording server's archives. For more information, see *Archiving* tab (Recording Server Properties).

What is archiving? Archiving is the automatic transfer of recordings from a speaker's default database to another location. This way, the amount of recordings you are able to store will not be limited by the size of the speaker's default database. Archiving also makes it possible to back up your recordings on backup media of your choice. See About Archiving for more information.

To access the *Archiving* tab, select the required speaker in the overview pane, then select the *Archiving* tab in the properties pane.



- ## Database Archiving Configuration

  The *Database archiving information* section in the upper part of the tab contains the following:

  - ***Enable archiving*:** Only available if one or more archives have been created on the recording server. Selecting box lets you enable archiving for the speaker in question. If you do not use the *Archive Wizard* to specify otherwise, archiving of recordings from the speaker will take place in the recording server's default archive.

  - ***Archive name*:** Name of the archive selected for the recording server.

  - ***Archive path*:** Path to the archive directory.

  - ***Schedule*:** Archiving schedule (i.e. how often archiving should take place). Scheduling is defined for each of a recording server's archives, and thus depends on the selected archive.

  - ***Retention*:** Retention time for database (in hours) and archive (in days and GB), as specified when defining archives through the Archive Wizard.

- ## Using Archive Wizard to Select Archive for Speaker

  When archiving is enabled for a speaker, the speaker's recordings will by default be archived in the default archive of the recording server to which the speaker belongs.

  If more than one archive has been created on the recording server, you can use the *Archive Wizard* to archiving location for the speaker:

  1. Click the *Archiving* tab's *Archive Wizard...* button to open the *Database Archiving Configuration Wizard*—normally just referred to as the *Archive Wizard*.

  2. When dealing with a speaker, the wizard only offers one option: *Select archive for device*. Click *Next* to continue.

3. In the *Archive Name* column, select the required archive. You cannot select more than one archive for a speaker. If you later want to use another archive for the speaker, you can run the wizard again and select another archive.

   Click *Next*.

4. The speaker's archiving settings will be changed to reflect your selection. A progress bar will indicate how the change progresses.

   When ready, the wizard will display a confirmation. If the selected archive could not be used, the wizard will display a link to detailed information about what caused the problem.

5. Click *Finish*.

- **List of Performed Archivings for Speaker**

  Each time archiving is performed for a speaker—according to the scheduling defined for the selected archive—the archived recordings are stored in separate subdirectories under the selected archive location.

  Technically, each performed archiving is thus stored individually, although this fact will be completely transparent when browsing the archived recordings in access clients, such as Ocularis Client Lite.

  The fact that archived recordings are stored individually means that you are able to view a list of each performed archiving, with exact timestamps information about the recordings included in each performed archiving:

  - ***Path*:** Path to the archive directory.
  - ***Begin time*:** Date and time of the oldest recording included in the performed archiving.
  - ***End time*:** Date and time of the most recent recording included in the performed archiving.

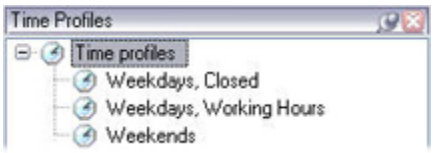
Time Profiles

Time profiles are periods of time defined in the Management Client. Time profiles can be used when creating rules in the Management Client; for example, you can create a rule which specifies that a certain action should take place within a certain time profile.

Time profiles are highly flexible: they can be based on one or more single periods of time, on one or more recurring periods of time, or a combination of single and recurring times. Many users will be familiar with the concepts of single and recurring time periods from calendar applications, such as the one in Microsoft Outlook.

Time profiles always apply in local time. This means that if your system has recording servers placed in different time zones, any actions (e.g. recording on cameras) associated with time profiles will be carried out in each recording server's local time. Example: If you have a time profile covering the period 14.30 to 15.30, any associated actions on a recording server placed in New York will be carried out when the local time is 14.30 to 15.30 in New York, while the same actions on a recording server placed in Los Angeles will be carried out some hours later, when the local time is 14.30 to 15.30 in Los Angeles.

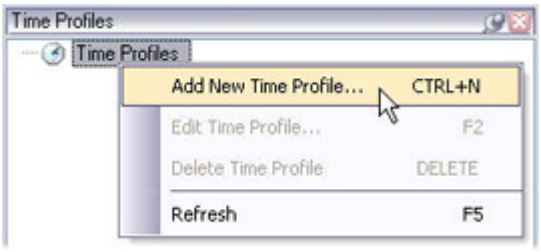
You create and manage time profiles in the Management Client by expand the navigation pane's *Rules and Alerts* folder, then selecting *Time Profiles*. A *Time Profiles* list will appear in the overview pane:



Example only

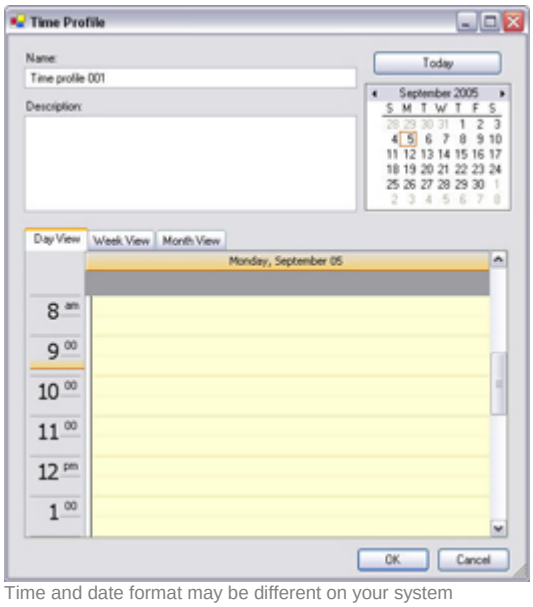
- ## Specifying a Time Profile

1. In the *Time Profiles* list, right-click *Time Profiles*, and select *Add New Time Profile...*:



Tip: Instead of right-clicking to select *Add New Time Profile...*, you can press CTRL+N on your keyboard.

This will open the *Time Profile* window:



Time and date format may be different on your system

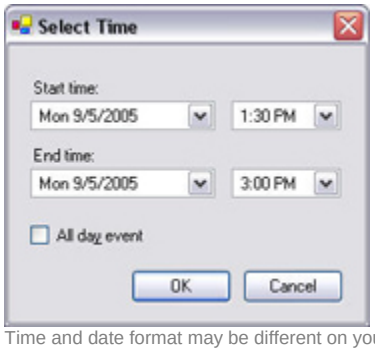
2. In the *Time Profile* window, type a name for the new time profile in the *Name* field. Optionally, type a description of the new time profile in the *Description* field.

3. In the *Time Profile* window's calendar, select either *Day View*, *Week View* or *Month View*, then right-click inside the calendar and select either *Add Single Time...* or *Add Recurrence Time...*

Tip: If you select a time period by dragging in the calendar before right-clicking, the selected period will automatically be used in the dialog that appears when you select *Add Single Time...* or *Add Recurring Time...*

- ## Specifying a Single Time

  When you select *Add Single Time...*, the *Select Time* window appears:



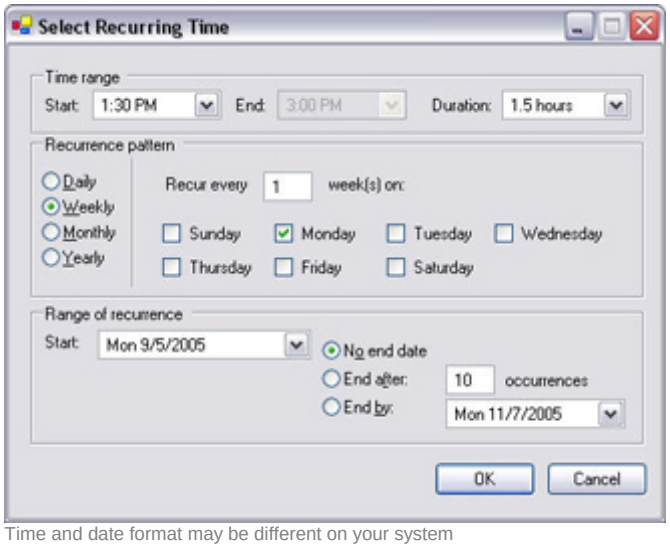
Time and date format may be different on your system

In the *Select Time* window, specify *Start time* and *End time*. If the time is to cover whole days, select the *All day event* box. Then click *OK*.

Tip: A time profile is able to contain several periods of time. If you want your time profile to contain further periods of time, add more single times or recurring times.

- ## Specifying a Recurring Time

  When you select Add Recurring Time..., the Select Recurring Time window appears:



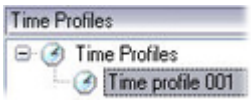
Time and date format may be different on your system

In the *Select Time* window, specify time range, recurrence pattern and range of recurrence.

Click *OK*.

Tip: A time profile is able to contain several periods of time. If you want your time profile to contain further periods of time, add more single times or recurring times.

4. When you have specified the required time periods for your time profile, click the *Time Profile* window's *OK* button. Your new time profile is added to the *Time Profiles* list in the overview pane:

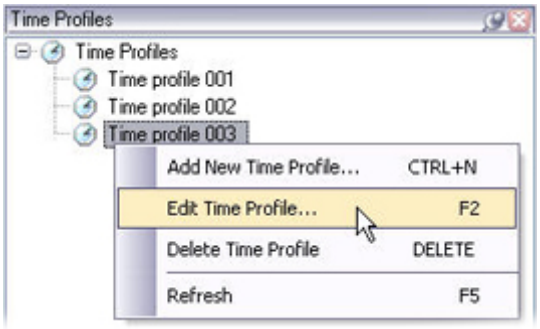


New time profile appearing in *Time Profiles* list

If at a later stage you wish to edit or delete the time profile, you can do that from the *Time Profiles* list.

- ## Editing a Time Profile

1. In the overview pane's *Time Profiles* list, right-click the required time profile, and select *Edit Time Profile...*:

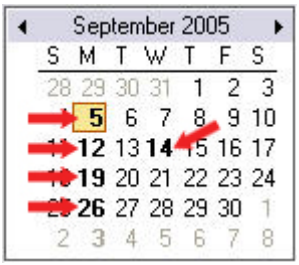


Tip: Instead of right-clicking to select *Edit Time Profile*, you can select the required time profile and press F2 on your keyboard.

This will open the *Time Profile* window.

2. In the *Time Profile* window, edit the time profile as required. Remember that a time profile may contain more than one time period, and that time periods may be recurring.

Tip: The small month overview in the top right corner of the *Time Profile* window can help you get a quick overview of the time periods covered by the time profile, as dates containing specified times are highlighted in bold. In the following example, the bold dates indicate that time periods have been specified on a number of days, and that a recurring time may have been specified on Mondays:

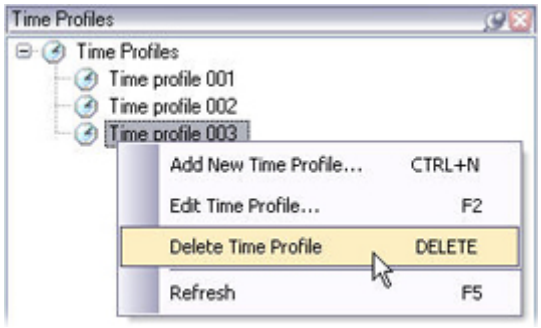


Bold dates in month overview indicate that times have been specified on those dates. You browse months by clicking the small back/forward buttons.

3. When you have made the required changes to the time profile, click the *Time Profile* window's *OK* button. You will be returned to the overview pane's *Time Profiles* list.

- ### Deleting a Time Profile

1. In the overview pane's *Time Profiles* list, right-click the required time profile, and select *Delete Time Profile...*:



Tip: Instead of right-clicking to select *Delete Time Profile*, you can select the required time profile and press the DELETE key on your keyboard.

2. You will be asked to confirm that you wish to delete the time profile. If you are sure that you wish to delete the time profile, click the *Yes* button.

3. The time profile will be removed from the overview pane's *Time Profiles* list.

User-Defined Events

User-defined events are events which are custom-made to suit your system. Like other events, user-defined events can be used in rules in order to trigger actions. Thus, when a user-defined event occurs, a rule can trigger that one or more actions should take place on the NetEVS system.

> Example: When user-defined event 37 occurs, PTZ camera 224 should stop patrolling and go to preset position 18.

Through roles, you define which of your users should be able to trigger the user-defined events; see Specifying the Rights of a Role for more information.

User-defined events can be used in two ways, simultaneously if required:

- **For Providing the Ability to Manually Trigger Events in Ocularis Client Lite**
  In this case, user-defined events make it possible for end users to manually trigger events while viewing live video in Ocularis Client Lite. Thus, when a user-defined event occurs because it is manually triggered by an Ocularis Client Lite user, a rule can trigger that one or more actions should take place on the NetEVS system.

- **For Providing the Ability to Trigger Events through API**
  In this case, user-defined events can be triggered from outside the surveillance system. Using user-defined events this way requires that a separate API (Application Program Interface; a set of building blocks for creating or customizing software applications) is used when triggering the user-defined event. Authentication through Active Directory is required for using user-defined events this way. This ensures that even though the user-defined events can be triggered from outside the surveillance system, only authorized users will be able to do it.

  Also, user-defined events can via API be associated with meta-data, defining certain devices or device groups. This is highly usable when using user-defined events to trigger rules: you avoid

having a rule for each device, basically doing the same thing. Example: A company uses access control, having 35 entrances, each with an access control device. When an access control device is activated, a user-defined event is triggered in NetEVS. This user-defined event is used in a rule to start recording on a camera associated with the activated access control device. It is defined in the meta-data which camera is associated with what rule. This way the company does not need to have 35 user-defined events and 35 rules triggered by the user-defined events; a single user-defined event and a single rule are enough.

When user-defined events are used this way, you may not always want them to be available for manual triggering in Ocularis Client Lite. You can use roles to define which user-defined events should be visible in Ocularis Client Lite; see Specifying the Rights of a Role for more information.

Whichever way you choose to use user-defined events, each user-defined event must first be added through the Management Client:

- ### Adding a New User-defined Event

  1. In the Management Client's navigation pane, expand *Rules and Alerts*, and select *User-defined Events*.

  2. In the overview pane, right click *Events* and select *Add New User-defined Event...*

  3. Type a name for the new user-defined event, and click *OK*. The newly added user-defined event will now appear in the list in the overview pane.

     Note: Do **NOT** use special characters when naming user-defined events. While these will be accepted by the system, they will cause problems when using NetEVS with Ocularis Base.

     User rights permitting (see roles), the user-defined event can now be manually triggered from Ocularis Client Lite. Already connected Ocularis Client Lite users must log out and log in again before the user-defined event will be visible.

     Remember to create one or more rules specifying what should take place when the custom event occurs.

- ### Editing the Name of an Existing User-defined Event

  1. In the Management Client's navigation pane, expand *Rules and Alerts*, and select *User-defined Events*.

  2. In the overview pane, select the required user-defined event.

  3. In the properties pane, overwrite the existing name.

  4. Click the Save button in the Management Client's toolbar.

     Already connected Ocularis Client Lite users must log out and log in again before the name change will be visible.

- ### Deleting an Existing User-defined Event

  Note: Remember that deleting a user-defined event will affect any rules in which the user-defined event is used.

Note: A deleted user-defined event will not disappear from Ocularis Client Lite immediately; only after Ocularis Client Lite users log out.

1. In the Management Client's navigation pane, expand *Rules and Alerts*, and select *User-defined Events*.

2. In the overview pane, right click the unwanted user-defined event, and select *Delete New User-defined Event...*

3. You will be asked to confirm that you want to delete the user-defined event; if you are sure, click the *Yes* button.

View Groups

- #### What Is a View Group?

  The way in which video from one or more cameras is presented in an access client (Ocularis Client Lite) is called a view. A view group is basically a container for one or more logical groups of such views.

  When using Ocularis Client Lite, a view group is presented as an expandable folder from which users can select the group, and subsequently the view they want to see.

  By default, each role you define in the Management Client is also created as a view group.

  - A view group based on a role will only be available to users/groups who have been assigned to the role in question. You are able to change this; see *View Group Rights* in Specifying the Rights of a Role.

  - A view group based on a role will by default carry the role's name. Example: If you create a role with the name *Building A Security Staff*, it will by default appear in Ocularis Client Lite as a view group called *Building A Security Staff*. You are able to change the name; see the following for more information.

  - In addition to the view groups you get when you add roles, you are able to create as many other view groups as you require. You can also delete view groups which you do not want to use, including those automatically created when adding roles. See the following for more information.

- #### Adding a View Group

  Even though a view group is by default created each time you add a role, view groups do not have to correspond to roles. You are therefore able to add any number of view groups if required.

  1. In the Management Client's navigation pane, expand the *Clients* node, right-click *View Groups,* and select *Add New View Group.* This opens the *Add View Group* dialog.

  2. Type the name of the new view group, then click *OK*.

  3. Optionally; in the Management Client's overview pane, select the added view group, then in the properties pane add a description of the view group.

  Note that no roles will have the right to use the newly added view group until you have specified such rights; see *View Group Rights* in Specifying the Rights of a Role for more information.

  Also note that even when you have specified which roles should be able to use the newly added view group, already connected access client users with the relevant roles must log out and log in again before they will be able to see the view group.

- ### Renaming a View Group

  Even though a view group is by default created each time you add a role, view groups do not have to correspond to roles. You are therefore able to rename each of your system's view groups if required, no matter whether the view groups were created automatically when adding a role or whether you added them manually.

  1. In the Management Client's navigation pane, expand *Clients,* and select *View Groups.*
  2. In the Management Client's overview pane, right-click the required view group and select *Rename View Group.*
  3. Change the view group's name as required, then press the return key on your keyboard.

  Note that access client users already connected must log out and log in again before the name change will be visible.

- ### Removing a View Group

  Even though a view group is by default created each time you add a role, view groups do not have to correspond to roles. You are therefore able to remove each of your system's view groups if required, no matter whether the view groups were created automatically when adding a role or whether you added them manually.

  1. In the Management Client's navigation pane, expand *Clients* and select *View Groups.*
  2. In the Management Client's overview pane, right-click the required view group and select *Delete View Group.*
  3. You will be asked to confirm that you want to remove the selected view group. If you are sure, click *Yes*.

- ### View Groups from an Access Client User's Perspective

  For more information about views from an access client user's perspective, see the separate Ocularis Client/Ocularis Client Lite User Manual available on the NetEVS software CD as well as from www.onssi.com.

NetDVMS Servers

If your organization has NetDVMS installations, you can integrate NetDVMS servers into your NetEVS solution. Do this by adding the NetDVMS servers through the NetEVS Management Client. If your organization also uses Ocularis Base, you will add all NVRs (NetEVS and NetDVMS) into the Ocularis Base Administrator application.

Note: Integration only works with NetDVMS servers running NetDVMS version 6.0 or later. Integration is not possible if your NetEVS system uses IPv6.

When added, such NetDVMS servers will then send data and video to the NetEVS surveillance system. You can compare added NetDVMS servers with recording servers, among other things because video from the NetDVMS servers will be available for viewing in access clients.

However, you cannot define cameras, user rights, scheduling, or other settings for the NetDVMS installation, or see previews of the cameras in NetEVS. All necessary NetDVMS settings must be made in NetDVMS's *Administrator* application or other relevant NetDVMS applications. See the NetDVMS documentation for more information.

For access client users, it will be completely transparent whether feeds come from an NetDVMS server or from an NetEVS recording server. The users have access to cameras depending on their roles defined in the NetEVS Management Client. If a role has borrowed user rights from an added NetDVMS server, users with that role have access to data from the NetDVMS server according to the borrowed user rights. See Managing Roles and Defining Roles with Access to NetDVMS Servers for more information.
NetDVMS servers added in the NetEVS Management Client have many similarities to NetEVS recording servers. They record video feeds, and communicate with cameras and other devices.

NetDVMS servers added in the NetEVS Management Client will be listed in the *Add/Remove NetDVMS Servers* dialog which you can open by selecting *NetDVMS Servers...* from the *Tools* menu.

Note: NetDVMS's Recording Server service must be running in order for NetEVS to receive data from the NetDVMS installation. See the NetDVMS documentation for more information.

- ## Adding NetDVMS Servers

  To add an existing NetDVMS installation to your NetEVS system, do the following:

  1. From the NetEVS Management Client's *Tools* menu select *NetDVMS Servers...*
  2. In the *Add/Remove NetDVMS Servers* dialog click the *Add...* button.
  3. Enter the IP address or the host name of the required NetDVMS server in the *NetDVMS server IP / Host name* field.
  4. Enter the port number used by the NetDVMS server's Image Server in the *Port number* field.

     Tip: The default port number is 80; if in doubt, you can find the port number in the *Image Server Administrator* window on the NetDVMS server.
  5. Now enter information about the administrator of the NetDVMS server. You can do this in 2 ways:

     - Select *Windows* and click the browse button to the right of the *Username* field to use the Windows authentication method which authenticates the administrator through the administrator's Windows login.

       - or -

     - Select *Basic* and enter the NetDVMS administrator's user name and password in the *Username* and *Password* fields.

     Note: The reason why it is important that you enter the NetDVMS administrator information, is that you as administrator then will have unlimited rights to data from both NetEVS and the NetDVMS installation.

  The connection to the NetDVMS server is now established, but no roles in the NetEVS Management Client—except the Administrator role—have been given access to data from the NetDVMS server. See Defining Roles with Access to NetDVMS Servers for more information about giving users access to data from added NetDVMS servers.

  Note: Remember to define the network configuration settings, so the NetEVS Management Server will be able to handle the token authentication of clients for added NetDVMS severs.

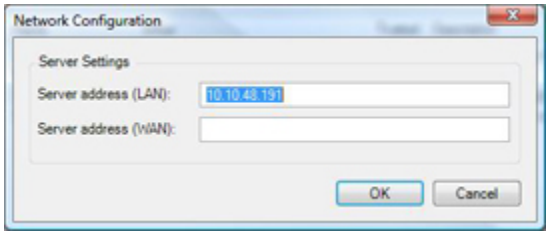
  Note: In the NetEVS Management Client, you must add all NetDVMS servers you would like to receive data from. The NetDVMS system's internal master/slave setup cannot be reused by NetEVS.

- ## Network Configuration

  With the network configuration settings you specify the NetEVS Management Server's server address so that the NetEVS Management Server can handle the token authentication of clients for added NetDVMS servers.

  1. From the Management Client's menu bar, select *Tools >NetDVMS Servers...*
  2. In the *Add/Remove NetDVMS Servers* window, click *Network...*
  3. Specify the LAN and/or WAN IP address of the NetEVS Management Server.

     If all involved servers (both the NetEVS Management Server and the required NetDVMS servers) are on your local network, you can simply specify the LAN address. If one or more involved servers access the system through an internet connection, you must also specify the WAN address.

  4. Click *OK*.
  5. Click *Close* to close the *Add/Remove NetDVMS Servers* dialog.

- ## Editing NetDVMS Servers

  1. From the NetEVS Management Client's *Tools* menu select *NetDVMS Servers...*
  2. Select an NetDVMS server from the list, and click the *Edit...* button in the *Add/Remove NetDVMS Servers* dialog.
  3. Edit the relevant settings and click *OK* to save your changes.

- ## Removing NetDVMS Servers

  To remove an NetDVMS server from your NetEVS system, do the following:

  1. From the NetEVS Management Client's *Tools* menu select *NetDVMS Servers...*
  2. Select an NetDVMS server from the list, and click the *Remove...* button in the *Add/Remove NetDVMS Servers* dialog.
  3. Click *Yes* to confirm that you want to remove the server.

Roles defined in NetEVS's Management Client can be given access to data from NetDVMS servers. This is done by coupling NetEVS roles with NetDVMS user rights.

- ## Prerequisites

  On the NetDVMS server, open the *Image Server Administrator* window to see if one of the NetDVMS users has user rights that can be used in connection with an NetEVS role.

Write the NetDVMS user's user name and password or Windows account down. You will need this information when you use NetEVS's Management Client to define roles with access to NetDVMS servers. Note that user names and passwords are case sensitive.

You can also create a new user in NetDVMS, and assign the required user rights in NetDVMS, so they match the NetEVS role. See the NetDVMS documentation for more information about creating new users in NetDVMS.

Note: Before you are able to give roles access to NetDVMS servers, the servers must be added through NetEVS's Management Client. See Managing NetDVMS Servers for more information.

- **Process of Defining Roles**

To give access to data from NetDVMS servers, do the following in the NetEVS Management Client:

1. In the Management Client's navigation pane, expand *Security,* and select *Roles*.
2. Select the required role from the list. If you want to define a new role, see About Roles for more information.
3. At the bottom of the *Role Settings* pane select the *NetDVMS Servers* tab.
4. Select the NetDVMS server to which you want to assign the role.
5. Select a user with the NetDVMS user rights that represent the correct user rights for the NetEVS role you are assigning it to.

You can do this in 2 ways:

- In the *Basic Authentication* section, enter the user name and password for a user which is defined as basic authenticated user in NetDVMS.

  - or -

- In the *Windows Authentication* section, enter the Windows account name for a user which is defined as a Windows authenticated user in NetDVMS.

Tip: If in doubt whether a user is defined as a Basic or Windows authenticated user in NetDVMS, open the *Image Server Administrator* window on the NetDVMS server, and click the *User Setup...* button. See the NetDVMS documentation for more information

Note: The selected NetDVMS user has not automatically been assigned to the role in question through NetEVS's Management Client. The user's NetDVMS user rights have just been borrowed by the role, but the actual user has not been assigned to the role.

Note: NetEVS does not verify that the specified user name or password is correct or that the specified user name, password or Windows account name correspond to a defined user in NetDVMS. Therefore, make sure that you enter the information correctly. Note also that user names and passwords are case sensitive.

6. From the *File* menu, select *Save* to save your settings.

Video Device Drivers

Video device drivers are small programs used for controlling/communicating with the camera devices connected to a recording server. The video device drivers should therefore be installed on each recording server on your NetEVS system.

Video device drivers are installed automatically during the initial installation of your NetEVS system. However, new versions of video device drivers are released and made available on the OnSSI website as they become available.

- ### Making New Video Device Driver Versions Available for Installation

  The latest version of video device drivers are available for download from www.onssi.com.

  Once you have downloaded the latest version of video device drivers, you are able to make the latest version available for download to recording servers through the Download Manager.

  Once the video device drivers have been made available for download, administrators of recording servers are able to connect to the Management Server's web page, and download the drivers from there.

- ### Installing Video Device Drivers

  IMPORTANT: During the installation process, the Recording Server service must be stopped (see Recording Server Service Administration).

  1. On the computer running the recording server, shut down any OnSSI software, including the Recording Server service.

  2. With an Internet Explorer browser, connect to the NetEVS Management Server at the following address:

     http://[Management Server address]:[port]/installation/admin/

     where [Management Server address] is the IP address or host name of the Management Server, and [port] is the port number which IIS has been set up to use on the Management Server.

     This will open the Management Server's web page. If not accessing the web page on the Management Server itself, log in with an account which has administrator rights on the Management Server.

  3. On the web page, click the required video device drivers link.

     Note: Depending on your security settings, one or more Windows security warnings may appear after you click the link. If such security warnings appear, accept security warnings by clicking *Run* or similar (exact button text depends on your browser version).

  4. Select required language, and click OK. This will open the Video Device Driver *Setup Wizard*, which will guide you through the installation.

  5. On the wizard's first step, click the *Next* button.

  6. On the wizard's second step, an installation path is automatically suggested. Click *Next*.

7. On the wizard's third step, select *Device drivers for NetEVS systems* from the menu, and click *Next*.

8. The wizard is now ready to install the video device drivers. Click the *Install* button to complete the installation of the video device drivers.

9. When ready, start the Recording Server service again.

- ### Removing Video Device Drivers

  For information about how to remove video device drivers from a recording server, see Video Device Drivers Removal.

Access Clients

Users access an NetEVS surveillance system with Ocularis Client or Ocularis Client Lite:

1. **Ocularis Client Lite** is a feature-rich IP video client that allows users to:

   - Monitor live video from an unlimited number of cameras at multiple sites, with instant investigation capabilities
   - Export video clips and still images for event handling or court evidence
   - Easily access and review recorded video based on time, motion, alerts, or sequences
   - Push video, either manually or automatically, to other uses of the system

   Ocularis Client Lite is available when logging in directly to the NVR.

2. **Ocularis Client** does everything that Ocularis Client Lite does and more, including:

   - Robust alerting based on a variety of system events
   - An Alert Manager used to view alerts received and handle these alerts to classify and assign to incident cases
   - Bookmarking video clips for sharing and easy retrieval
   - Map which can display layouts of the organization's security environment
   - Video Wall Support

   Ocularis Client is available when using Ocularis Base with NetEVS or other NVRs.

- ### How Do I Set Up Users and their Rights?

  If using Ocularis Base with NetEVS, set up the surveillance system's users and their access rights within the Ocularis Administrator application. See the Ocularis Administrator User Manual for more information.

  If using NetEVS with Ocularis Client Lite, set up your surveillance system's users, and their access rights, as part of the roles definition process in the NetEVS Management Client.

Part of the security surrounding the use of a video client with NetEVS is based on tokens.

When you use a client to log in to the surveillance system, the client receives a token from the NetEVS Management Server. The token contains important security-related time information.

The NetEVS Management Server also sends a similar token to the required recording server(s). This is partly due to the fact that recording servers may be located all around the world; each recording server thus uses the token to validate the client's token against the local time in the recording server's own time zone.

The validity of a token expires after a while. It is therefore important that time on your NetEVS Management Server and all of your organization's recording servers is synchronized (minute and second-wise; hours may of course be different in different locations around the world). If time on the servers is not synchronized, you may experience that a recording server is ahead of the Management server's time.

When a recording server is ahead of the NetEVS Management Server's time, it may result in a client's token expiring on the recording server earlier than intended by the Management Server. Under unfortunate circumstances you might even experience that a recording server claims that a client's token has already expired when it receives it; effectively preventing the client from viewing recordings from the recording server.

How to synchronize time on your organization's servers depends on your network configuration, internet access, use of domain controllers, etc. Often, servers on a domain are already time-synchronized against the domain controller. If so, you should be fine as long as all required servers belong to the domain in question.

If your servers are not already time-synchronized, it will be necessary to synchronize the servers' time against a time server, preferably the same time server.

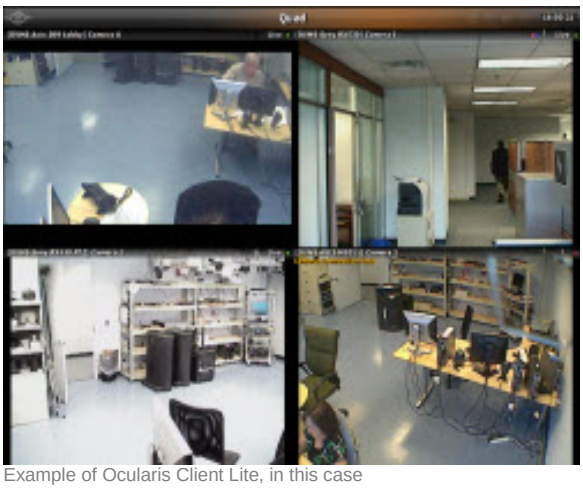
The following articles from Microsoft describe what to do in different situations:

- How to configure an authoritative time server in Windows Server 2003
- How to synchronize the time with the Windows Time service in Windows XP
- Registry entries for the W32Time service

If the above links do not work for you, try searching www.microsoft.com for *time server*, *time service*, *synchronize servers* or similar.

Ocularis Client Lite

Ocularis Client and Ocularis Client Lite provides remote users with extremely feature-rich access to the surveillance system.



Example of Ocularis Client Lite, in this case displaying live video from 4 cameras

Ocularis Client and Ocularis Client Lite must be installed locally on the remote user's computer.

Where can I find more information about Ocularis Client Lite? Once installed, Ocularis Client Lite has its own built-in help system. Alternatively, refer to the Ocularis Client Lite User's Manual, available on the NetEVS software CD as well as from www.onssi.com. For Ocularis Client Lite system requirements, see System Requirements.

Installation

Typically, Ocularis Client Lite may be downloaded from the surveillance system server, then installed on the workstation. Alternatively, your surveillance system administrator may ask you to install Ocularis Client Lite from a CD (see Installation from CD).

To download and install Ocularis Client Lite from the surveillance system server, do the following:

1. Verify that your computer meets Ocularis Client Lite's minimum system requirements.
2. Open an Internet Explorer browser (version 6.0 or later), and connect to surveillance system server at the URL or IP address specified by your system administrator. The address is typically:

   http://[Management Server address]:[port]/installation/

   where [Management Server address] is the IP address or host name of the Management Server, and [port] is the port number which IIS has been set up to use on the Management Server.

   When you are connected to the surveillance system server, you will see a welcome page.
3. On the welcome page, click the required language link for Ocularis Client Lite.

   Tip: Depending on your security settings, you may receive one or more security warnings (*Do you want to run or save this file?*, *Do you want to run this software?* or similar; exact wording depends on your browser version). When this is the case, accept the security warnings (by clicking *Run* or similar; exact button names depend on your browser version).
4. The *Ocularis Client Lite Setup Wizard* begins. In the wizard, click *Next*, and follow the installation instructions.

In the event that your surveillance system administrator asks you to install Ocularis Client Lite from a CD, do the following:

1. Verify that your computer meets Ocularis Client Lite's minimum system requirements.
2. Insert the surveillance system software CD, wait for a short while, select required language, then click the *Install Ocularis Client Lite* link.

   Tip: Depending on your security settings, you may receive one or more security warnings (*Do you want to run or save this file?*, *Do you want to run this software?* or similar; exact wording depends on your browser version). When this is the case, accept the security warnings (by clicking *Run* or similar; exact button names depend on your browser version).
3. When the installation wizard starts, click *Next* to continue the installation and follow the steps in the installation wizard.

NetMatrix Monitor

NetMatrix is a feature allowing distributed viewing of video from any camera on your surveillance system to any monitor. NetMatrix is configured on the NetEVS system by through the Management Client. The NetMatrix Monitor application is one of 2 options for viewing NetMatrix-triggered video on client computers (the other option is Ocularis Client Lite).

Note: It is not possible to use the NetMatrix Monitor application if your NetEVS system uses IPv6. If using Ocularis Client with Ocularis Base, NetMatrix use is not necessary and this functionality is supported through Ocularis Base.

A computer on which NetMatrix-triggered video can be shown is known as a NetMatrix recipient. Being able to view NetMatrix-triggered video requires that either the dedicated NetMatrix Monitor application or Ocularis Client Lite is installed on the NetMatrix recipient. This section describes the NetMatrix Monitor application.

There are 2 ways in which NetMatrix-triggered video can appear on a NetMatrix recipient:

- Another user wants to share important video, and sends it to the required NetMatrix recipient ("manual push")
- The video is sent to the required NetMatrix recipient automatically when a predefined event occurs on the surveillance system; for example when a door sensor detects that a door is opened, or when the surveillance system detects motion in the video from a camera

As part of the video exchange between computers on the NetMatrix-enabled surveillance system, certain computers are able to send commands to NetMatrix recipients. The commands typically tell the NetMatrix recipients to connect to, or disconnect from, video feeds from a particular cameras. Exactly which computers are allowed to send commands to your NetMatrix recipient is defined as part of the configuration of your NetMatrix Monitor application.

See also installing the NetMatrix Monitor, configuring the NetMatrix Monitor, and day-to-day use of the NetMatrix Monitor.

Note: Read the License Terms on the Product License Sheet (enclosed with the software CD) before installing the NetMatrix Monitor application. Since the NetMatrix Monitor software communicates directly with cameras, it is important that NetMatrix Monitor users download and install the latest video device drivers; see Managing Video Device Drivers.

1. Insert the surveillance system software CD, wait for a short while, select required language, then click the *Install NetMatrix Monitor* link.

   Alternatively, if you are installing a version downloaded from the internet, run the NetMatrix Monitor *.exe* file from the location you have saved it to.

   Tip: Depending on your security settings, you may receive one or more security warnings (*Do you want to run or save this file?*, *Do you want to run this software?*). When this is the case, click the *Run* button.

2. When the installation wizard starts, click *Next* to continue the installation.

3. Read and accept the License Agreement.

4. Specify your *User Name* and *Company Name*. You furthermore have the option of selecting whether the NetMatrix Monitor should be available just for you, or for anyone using the computer. If

in doubt, select *Anyone ...* Then click *Next*.

5. Follow the next few simple steps in the installation wizard until you are asked to select the setup type that best suits your needs:

   - If you want a shortcut to the NetMatrix Monitor placed on your desktop automatically, keep *Add shortcut to desktop* selected.
   - If you want the NetMatrix Monitor to run automatically each time the computer loads Windows, keep *Add NetMatrix Monitor to Startup group* selected.

   Click *Next* twice.

6. Click *Finish* on the last step to complete the installation.

The way the configuration window for the NetMatrix Monitor application is accessed differs depending on whether you configure the NetMatrix Monitor for the first time or you want to make changes to the configuration of a running NetMatrix Monitor.

- ### First Time Configuration

  1. Double-click the NetMatrix Monitor shortcut on your desktop.

  2. In the *Password* and *Retype Password* fields, specify the password required for communicating with your NetMatrix Monitor. The password must match the password that has been specified for your NetMatrix recipient on the surveillance system server; consult your surveillance system administrator if in doubt.

     Tip: Memorize the password; you will need it if you want to change your NetMatrix Monitor's configuration at a later date.

  3. Specify the port number on which your NetMatrix Monitor will listen for commands (e.g. about connecting to a camera). By default, port 12345 is used. The port number must match the port number that has been specified for your NetMatrix recipient on the surveillance system server; consult your surveillance system administrator if in doubt.

  4. Specify which hosts (other computers) are allowed to send commands to your NetMatrix Monitor.

     If commands from any host should be accepted, select *Allow All Hosts*. If only commands from particular hosts should be accepted, leave the *Allow All Hosts* box cleared, and do the following to add each required host:

     a. Specify the IP address of the host in the field below the large *Allowed Hosts* box in the right side of the window:

     Tip: To jump to the next IP address segment in the field, press SPACE on your keyboard.

     b. Click the *Add* button to add the host to the list of Allowed Hosts.

     c. Repeat for each required host.

     Tip: If you later want to remove a host from the list, select the unwanted host in the list, then click the *Delete* button.

5. Now you are able to customize the behavior of your NetMatrix Monitor; you do this by adjusting settings in the window's *Run Mode* section.

   Tip: The NetMatrix Monitor is pre-configured with typically required behavior (settings marked by (default) in the following list). You do not need to adjust the settings listed in this step unless you want to customize the way your NetMatrix Monitor should behave; consult your surveillance system administrator if in doubt.

   - ***Always On Top*:** If selected (default), this setting forces the NetMatrix Monitor window on top of other windows. This setting can subsequently be changed from a menu accessible by right-clicking inside the NetMatrix Monitor window.
   - ***Auto Accept All Commands***: If selected (default), this setting will make your NetMatrix Monitor automatically accept all commands received from allowed hosts (provided the commands are accompanied by the correct password). If this setting is not used, a dialog in the NetMatrix Monitor window will prompt you to accept each received command.
   - ***Display Camera Info*:** If selected (default), this setting will show camera information in the NetMatrix Monitor window. This allows camera names or camera IP addresses to be displayed, even if the NetMatrix Monitor window is running in full screen mode.
   - ***Keep Video Aspect Ratio*:** If selected (default), this setting will keep the original aspect ratio of images when the NetMatrix Monitor window is resized. If this setting is not used, images will be stretched to fill the available space.
   - ***Reconnect On Startup*:** If selected (default), the NetMatrix Monitor will automatically attempt to connect to the last connected camera when starting. If this setting is not used, no camera connection will be attempted at startup.
   - ***Camera Layout*:** Lets you select whether the NetMatrix Monitor window should run in 1×1 or 2×2 mode.
     - In *1×1* mode, the NetMatrix Monitor window is capable of displaying video feeds from a single camera at a time
     - In *2×2* mode (default), the NetMatrix Monitor window is capable of showing video feeds from up to 4 cameras at a time

       If using 2×2 mode, the video feeds will be inserted in top-left-to-bottom-right order, according to a first-in-first-out principle: video feeds will remain in the position in which they were loaded; when all 4 positions are used, any new video feeds will replace the oldest image feeds.

       If you select *Insert Camera On Top*, new video feeds will always be displayed in the top left position while any previously received video feeds will be shifted one position forward and eventually be “pushed out”
   - ***Startup Mode*:** Lets you select how the NetMatrix Monitor window should open when starting.
     - With *Full Screen*, the NetMatrix Monitor window will open in full screen mode, i.e. completely maximized, without any title bar, etc.
     - With *Window*, the NetMatrix Monitor window will open in regular mode, i.e. as a scalable window with a title bar, etc.

- With *Hidden*, the NetMatrix Monitor window will load in hidden mode, in which you will not see the window until there is video to display. You will, however, still be able to access the window by clicking the NetMatrix Monitor icon in Windows' notification area (also known as the system tray; typically located in the bottom right corner of your screen):

Example only; your notification area may have different content

Depending on your *On Connect* settings (see below), a hidden NetMatrix Monitor window can automatically be restored to previous size when a connect command is received.

- ***On Connect*:** Lets you determine how the NetMatrix Monitor window should react when a connect command is received.
  - *Show Alert*: If selected, this setting will show a small alert box in the bottom right corner of your screen when a connect command is received. The alert box will close automatically after 10 seconds.
  - *Show Window*: If selected, this setting will automatically restore a NetMatrix Monitor window in hidden mode to previous size when a connect command is received.
- ***On Disconnect*:** Lets you determine how the NetMatrix Monitor window should react when a disconnect command is received.
  - *Show Alert*: If selected, this setting will show a small alert box in the bottom right corner of your screen when a disconnect command is received. The alert box will close automatically after 10 seconds.
  - *Hide Window*: If selected, this setting will automatically send the NetMatrix Monitor window to hidden mode when a disconnect command is received. When the window is in hidden mode, you still be able to access it by clicking the NetMatrix Monitor icon in Windows' notification area (also known as the system tray).

6. Click *OK*.

Changing the Configuration of a Running NetMatrix Monitor

1. Open the NetMatrix Monitor window.
2. Right-click anywhere inside the NetMatrix Monitor window, and select *Config* from the menu that appears:

3. Specify the password required for communicating with your NetMatrix Monitor:

4. Click *OK*. This will open the *NetMatrix Monitor Configuration* window. Each of the window's settings is described in the previous section, First Time Configuration.

5. Make the required changes, and click *OK*

Video feeds may be observed from connected cameras in the NetMatrix Monitor window.

- ### Opening the NetMatrix Monitor Window

  Depending on configuration, the NetMatrix Monitor window may appear on your screen automatically.

  If the NetMatrix Monitor application is not running, you can start it by double-clicking the NetMatrix Monitor shortcut on your desktop.

  You may also find that the NetMatrix Monitor application is running, but in hidden mode. When the NetMatrix Monitor application runs in hidden mode, you will not see the NetMatrix Monitor window until there are images to display. You will, however, still be able to access the window by double-clicking the NetMatrix Monitor icon in Windows' notification area (also known as the system tray; typically located in the bottom right corner of your screen):

  Example only; your notification area may have different content

- ### 1×1 and 2×2 View

  Depending on configuration, your NetMatrix Monitor window will display either a 1×1 or a 2×2 view:

  - With 1×1, the NetMatrix Monitor window is capable of displaying video feeds from a single camera at a time.

  - With 2×2, the NetMatrix Monitor window is capable of showing video feeds from up to 4 cameras at a time.

    If using 2×2, the video feeds will be inserted in top-left-to-bottom-right order, according to a first-in-first-out principle: Video feeds will remain in the position in which they were loaded; when all 4 positions are used, any new video feeds will replace the oldest image feeds.

    A slightly different configuration is also possible, in which case new video feeds will always be displayed in the top left position while any previously received video feeds will be shifted one position forward and eventually be “pushed out”.

- ### Camera Information

  Depending on configuration, the NetMatrix Monitor window is able to show camera information immediately above the images.

- ### Image Aspect Ratios

  Depending on configuration, images in the NetMatrix Monitor window can either be displayed with their original aspect ratio, or be stretched to fill the available space.

- ## Toggling between Regular and Full Screen View

  To quickly toggle between viewing the NetMatrix Monitor window in full screen or regular view, double-click anywhere inside the NetMatrix Monitor window.

- ## Changing the Configuration of a Running NetMatrix Monitor

  1. Open the NetMatrix Monitor window. Right-click anywhere inside the NetMatrix Monitor window, and select *Config* from the menu that appears:

  2. Specify the password required for communicating with your NetMatrix Monitor:

  3. Click *OK*. This will open the *NetMatrix Monitor Configuration* window. See Configuring the Matrix Monitor Application for details about your configuration options.

  4. Make the required changes, and click *OK.*

- ## Accepting Received Commands

  As part of the image exchange between computers on the NetMatrix system, other computers (exactly which computers are defined as part of your NetMatrix Monitor application's configuration) are able to send commands to your NetMatrix Monitor. The commands typically tell your NetMatrix Monitor to connect to, or disconnect from, an image feed from a particular camera.

  As part of the configuration, your NetMatrix Monitor may have been set up to automatically accept all received commands, in which case new video feeds will automatically be displayed in your NetMatrix Monitor window.

  If your NetMatrix Monitor has not been set up to automatically accept all received commands, you will be prompted to accept all received commands before they are executed. When a command is received, a small dialog will be displayed in the bottom right corner of your screen. The dialog will display the IP address or host name of the sender as well as information about the command itself.

  To accept the command, click the *Accept* button. If you do not want to accept the command, click the *Decline* button.

- ## Alerts upon Executed Commands

  As part of the configuration, the NetMatrix Monitor may have been set up to automatically display alerts each time a command is executed.

  When this is the case, a small alert box will be displayed in the bottom right corner of your screen upon each executed command. The alert box will inform you about the executed command.

The alert box will close automatically after 10 seconds. If required, you can close the alert box manually at any time.

- **Shortcut Menus**

  2 shortcut menus are available when working with the NetMatrix Monitor:

NetMatrix Monitor Window Shortcut Menu

By right-clicking anywhere inside the NetMatrix Monitor window, you get access to a shortcut menu:

The shortcut menu has the following options:

- ***Full Screen*:** Lets you view the NetMatrix Monitor window in full screen mode, i.e. completely maximized, without any title bar, etc. To return to regular view, select *Full Screen* again.

  Tip: To quickly toggle between viewing the NetMatrix Monitor window in full screen or regular view, you can also double-click anywhere inside the NetMatrix Monitor window.

- ***Always On Top*:** Forces the NetMatrix Monitor window on top of other windows on your screen.

- ***Config*:** Lets you access the *NetMatrix Monitor Configuration* window. Note that before the *NetMatrix Monitor Configuration* window opens, you will be prompted to specify the password required for communicating with your NetMatrix Monitor:

- ***Hide Window*:** Sends the NetMatrix Monitor window to hidden mode, in which you will not see the window until there is video to display. You will, however, still be able to access the window by clicking the NetMatrix Monitor icon in Windows' notification area (also known as the system tray; typically located in the bottom right corner of your screen):

  Example only; your notification area may have different content

Notification Area Shortcut Menu

By right-clicking the NetMatrix Monitor icon in Windows' notification area, you get access to another shortcut menu:

The shortcut menu has the following options:

- ***Show Window*:** Restores the NetMatrix Monitor window in either regular or full screen view, depending on configuration.
- ***Config*:** Lets you access the *NetMatrix Monitor Configuration* window. Note that before the *NetMatrix Monitor Configuration* window opens, you will be prompted to specify the password required for communicating with your NetMatrix Monitor.
- ***Exit*:** Shuts down the NetMatrix Monitor application. Note that before the application closes, you will be prompted to specify the password required for communicating with your NetMatrix Monitor.

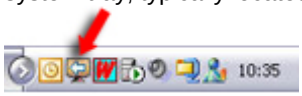
  A shut down NetMatrix Monitor application can be started again by double-clicking the NetMatrix Monitor shortcut on your desktop.

- ### Shutting Down the NetMatrix Monitor Application

Closing the NetMatrix Monitor window by clicking the close button in the NetMatrix Monitor window's title bar will not in itself shut down NetMatrix Monitor application; it will merely send the window into hidden mode.

To shut down NetMatrix Monitor application, do the following:

1. Right-click the NetMatrix Monitor icon in Windows' notification area (also known as the system tray; typically located in the bottom right corner of your screen):

   Example only; your notification area may have different content

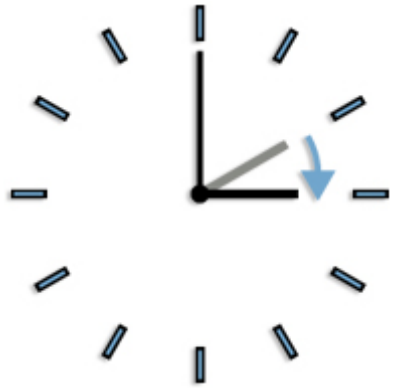
   Right-clicking the icon lets you access a shortcut menu:

2. From the menu, select *Exit.* Note that before the application closes, you will be prompted to specify the password required for communicating with your NetMatrix Monitor.

A shut down NetMatrix Monitor application can be started again by double-clicking the NetMatrix Monitor shortcut on your desktop. Alternatively, use Windows' *Start* menu.

Daylight Saving Time

Daylight saving time (DST, also known as summer time) is the practice of advancing clocks in order for evenings to have more daylight and mornings to have less. Typically, clocks are adjusted forward one hour sometime during the spring season and adjusted backward sometime during the fall season, hence the saying *spring forward, fall back*. Note that use of DST varies between countries/regions.



Clocks are adjusted forward when DST starts

When working with a surveillance system, which is inherently time-sensitive, it is important to know how the system handles DST.

- **Spring: Switch from Standard Time to DST**

  The change from standard time to DST is not much of an issue since you jump one hour forward. Typically, the clock jumps forward from 02:00 standard time to 03:00 DST, and the day thus has 23 hours. In that case, there is simply no data between 02:00 and 03:00 in the morning since that hour, for that day, did not exist.

- **Fall: Switch from DST to Standard Time**

  When you switch from DST to standard time in the fall, you jump one hour back. Typically, the clock jumps backward from 02:00 DST to 01:00 standard time, repeating that hour, and the day thus has 25 hours.

Server-side Handling

NetEVS uses Coordinated Universal Time (UTC), which is the official world reference for time. UTC is not adjusted to reflect switches either to or from DST. Since NetEVS uses UTC, no NetEVS recordings are ever stored with the same timestamp twice, not even during the DST change hour.

Client-side Handling

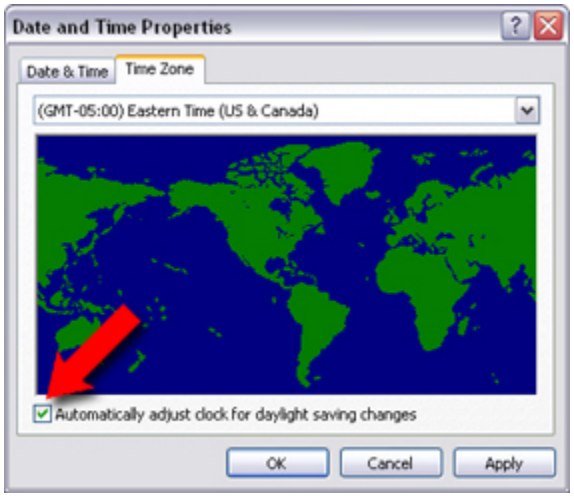
Client applications used for viewing recordings from Ocularis Client Lite and Ocularis Client—also use UTC when displaying recordings. The client simply takes local time settings (time zone and any DST) from the computer on which the client is used, and converts those time settings to UTC. This means that there is a very simple solution for viewing recordings from the DST change hour.

Viewing DST Change Hour Recordings in Access Clients

When you want to view recordings from the last (most recent) hour of the DST change hour, simply go ahead and view them.

When you want to view recordings from the first hour of the DST change hour, do the following:

1. On the computer on which the access client is used, go to Windows' *Start* menu, and select *Control Panel*.
2. In the Control Panel, double-click *Date and Time*.
3. In the *Date and Time Properties* window, select the *Time Zone* tab.
4. Make sure the *Automatically adjust clock for daylight saving changes* box is cleared, then click *OK*.



When the *Automatically adjust clock for daylight saving changes* check box is cleared, recordings from the entire DST period will be Standard Time (or one hour off compared to DST). This means that recordings from the first hour of the DST change hour can now be viewed.

IMPORTANT: When you are done viewing recordings from the first hour of the DST change hour, select the *Automatically adjust clock for daylight saving changes* check box again to avoid confusion. We recommend not to clear the *Automatically adjust clock for daylight saving changes* check box unless you specifically need to view recordings from the first hour of the DST change hour.

Backup, Move & Restore

It can sometimes be necessary to move the NetEVS Management Server installation from one physical server to another. The Management Server stores your NetEVS system's configuration in a database. If moving the Management Server from one physical server to another, it is vital that you make sure that your new Management Server also gets access to this database. The system configuration database can be stored in two different ways:

- **Network SQL Server:** If you are storing your NetEVS system's configuration in a database on an existing SQL 2005 Server on your network, you can simply point to the database's location on that SQL Server when installing the Management Server software on your new Management Server. In that case, you can skip much of the information in the following.

- **SQL Server Express Edition:** If you are storing your NetEVS system's configuration in a SQL Server Express Edition database on the Management Server itself, it is important that you back up the existing Management Server's system configuration database before the move. By backing up the database, and subsequently restoring it on the new server, you will not have to reconfigure your cameras, rules, time profiles, alerts, etc. after the move.

Some of the prerequisites information in the following—and all of the information about backing up and restoring your system configuration—is only relevant for users of SQL Server Express Edition.

- ### What Happens while the Management Server Is Unavailable?

  - **Recording servers will still be able to record:** Any currently working recording servers will have received a copy of their configuration from the Management Server, so they will be able to work and store recordings on their own while the Management Server is down. Scheduled and motion-triggered recording will therefore work, and event-triggered recording will also work unless based on events related to the Management Server.

  - **Recording servers will store log data locally:** They will automatically send log data to the Management Server when the Management Server becomes available again.

  - **Access clients will not be able to log in:** Client access is authorized through the Management Server. Without the Management Server, clients will not be able to log in.

  - **Already logged in access clients can remain logged in for up to an hour:** When clients log in, they are authorized by the Management Server. Technically, the Management Server gives each client a token, which allows the clients to communicate with recording servers for up to one hour. Should the clients need to communicate with recording servers for longer than one hour, the Management Server automatically renews the tokens. When the Management Server is down, however, tokens cannot be renewed, and the clients will lose their connections to recording servers when their tokens expire. If you can get the new Management Server up and running within a hour, there is a good chance that many of your users will not be affected.

  - **No ability to configure the system:** Without the Management Server, you will not be able to change system configuration through the Management Client.

  We recommend that you inform your users about the possibility of losing contact with the surveillance system while the Management Server is down, even though some users might not experience loss of contact at all.

- ## Prerequisites

  - **Your NetEVS software installation file** for installation on the new Management Server.

  - **Your initial license (.lic) file**, i.e. the one you used when initially installing NetEVS, not the .lic file which is the result of your license activation. License activation is, among other things, based on the specific hardware on which the activation took place; therefore an activated .lic file cannot be reused when moving to a new server. Note that if you are also upgrading your NetEVS software in connection with the move, you will have received a new initial .lic file together with your new Software License Code (SLC).

  - **If you activated NetEVS on the old server, and you are installing the same software version on the new server: Contact OnSSI Technical Support**; notify us that the software is being moved, and ask for your computer information to be reset. Why? An already activated license (.lic) file cannot be reused on a new server. How? Send an e-mail to support@onssi.com; including your Software License Code (SLC). Preferably you should send the e-mail from the e-mail address with which you previously registered your SLC.

  - **Network SQL Server users only: Administrator rights on the SQL Server** are required whenever you need to create, move or upgrade the Management Server's system configuration database on the SQL Server. Once you are done creating, moving or updating, being database owner of the Management Server's system configuration database on the SQL Server will suffice.

  - **SQL Server Express Edition users only: Microsoft SQL Server Management Studio Express**, a tool downloadable for free from www.microsoft.com/downloads. Among its many features for managing SQL Server Express databases are some easy-to-use backup and restoration features. Download and install the tool on your existing Management Server *and* on the server which will be your future Management Server (you will need it for backup as well as restoration).

- ## Backing Up the System Configuration

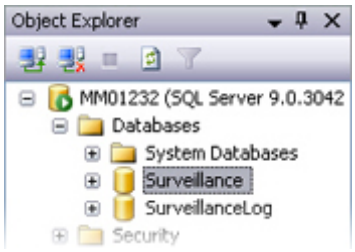
  The following only applies if you are storing your NetEVS system's configuration in a SQL Server Express Edition database on the Management Server itself.

  Prerequisite: Stop the Management Server Service to prevent configuration changes being made. This is important since any changes made to the NetEVS configuration between the time you create a backup and the time you restore it on your new Management Server will be lost. If changes are made after the backup, you will have to make a new backup.

  1. Open Microsoft SQL Server Management Studio Express from Windows' *Start* menu by selecting *All Programs > Microsoft SQL Server 2005 > SQL Server Management Studio Express*. When you open the tool, you are prompted to connect to a server. Specify the name of the required SQL Server (in the example, the server is called *MM01232*), and connect with the defaults:

Tip: You do not have to type the name of the SQL server: If you click inside the *Server name* field and select <*Browse for more...*>, you can select the required SQL Server from a list instead.

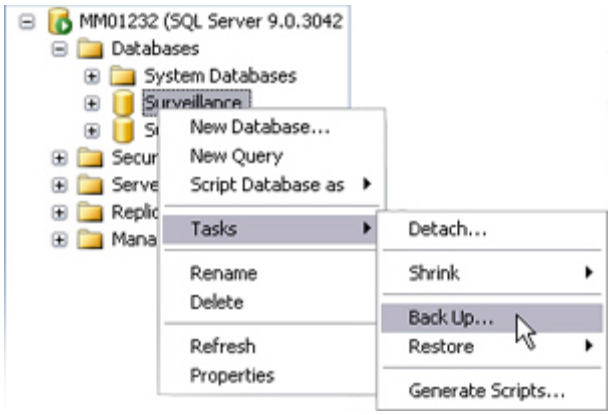
2. Once connected, you will see a tree structure in the *Object Explorer* in the left part of the window. Expand the SQL Server item, then the *Databases* item. We are primarily interested in the *Surveillance* database:



The *Surveillance* database contains your entire NetEVS system configuration, including recording servers, cameras, inputs, outputs, users, rules, alerts, patrolling profiles, etc.

No *Surveillance* database? *Surveillance* is the default name of the database containing the system configuration. If you can find the database, but it is not called *Surveillance*, it could be because you gave the database another name during the Management Server installation. In the following, we will assume that the database uses the default name.

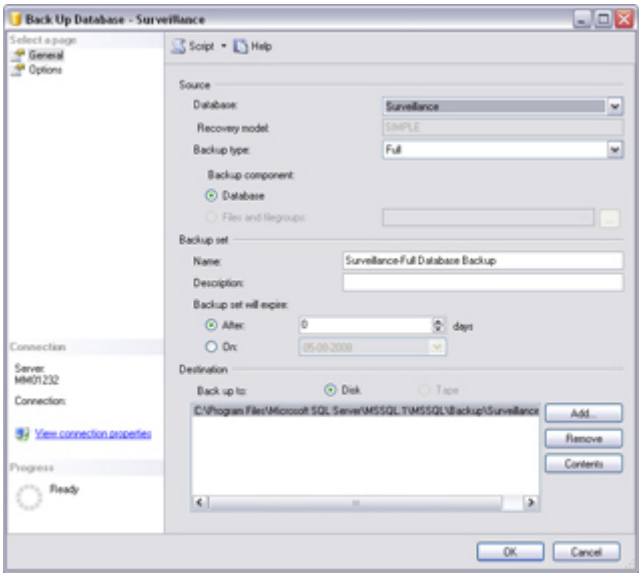
3. Right-click the *Surveillance* database, and select *Tasks* > *Back Up...*



4. On the *Back Up Database* dialog's *General* page, do the following:

    - Under *Source*: Verify that the selected database is *Surveillance* and that the backup type is *Full*.

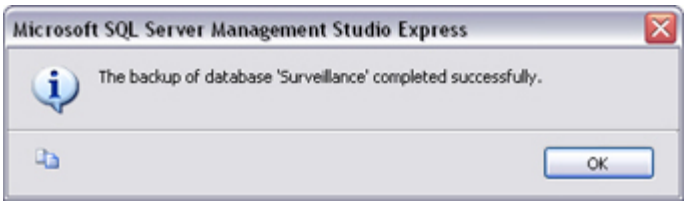
    - Under *Destination*: A destination path for the backup is automatically suggested. Verify that the path is satisfactory. If not, remove the suggested path, and add another path of your choice.



5. On the *Back Up Database* dialog's *Options* page, do the following:

    - Under *Reliability*: Select *Verify backup when finished* and *Perform checksum before writing to media*.

6. Click *OK* to begin the backup. When backup is finished, you will see a confirmation:



Then exit Microsoft SQL Server Management Studio Express.

Tip: Also consider backing up the *SurveillanceLog* database, using the same method. The *SurveillanceLog* database (name may be different if you renamed the system configuration database) contains all your NetEVS system logs, including errors reported by recording servers and cameras. Backing up this database is not vital since it does not contain any system configuration, but you may later appreciate having access to system logs from before the Management Server move.

- ## New Database when Installing New Management Server

The following only applies if you are storing your NetEVS system's configuration in a SQL Server Express Edition database on the Management Server itself.

Management Server installation is divided into three steps. During step 2 of the installation on your new Management Server, make sure you select *Create a new database* for the system configuration database, even though you have a backup of the database from your old Management Server.

In the following, we will overwrite the new and empty database by restoring the backup we just created.

Since we are going to overwrite the new and empty database, it is important that it has the same name as the backed-up database (if your backed-up database has the default name *Surveillance*, just use the default name *Surveillance* when creating the new database too).

The password for the database is not significant in this backup/restore context, but we recommend that you just use the default setting *Allow server to control password*.

- ## Restoring the System Configuration

The following only applies if you are storing your NetEVS system's configuration in a SQL Server Express Edition database on the Management Server itself.

Prerequisite: Stop the Management Server Service on the new Management Server to prevent configuration changes being made until you have restored the system configuration database.

1. Open Microsoft SQL Server Management Studio Express from Windows' *Start* menu by selecting *All Programs* > *Microsoft SQL Server 2005* > *SQL Server Management Studio Express*. When you open the tool, you are prompted to connect to a server. Specify the name of the required SQL Server, and connect with the defaults.

   Tip: You do not have to type the name of the SQL server: If you click inside the *Server name* field and select <*Browse for more...*>, you can select the required SQL Server from a list instead.

2. Once connected, you will see a tree structure in the *Object Explorer* in the left part of the window. Expand the SQL Server item, then the *Databases* item.

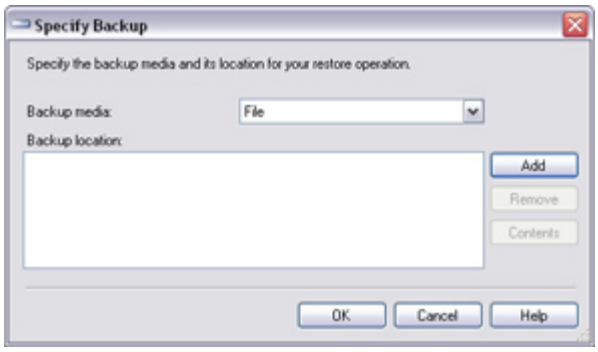
3. Right-click the *Surveillance* database, and select *Tasks* > *Restore* > *Database...*

No *Surveillance* database? *Surveillance* is the default name of the database containing the system configuration. If you can find the database, but it is not called *Surveillance*, it could be because you gave the database another name during the Management Server installation. In the following, we will assume that the database uses the default name.

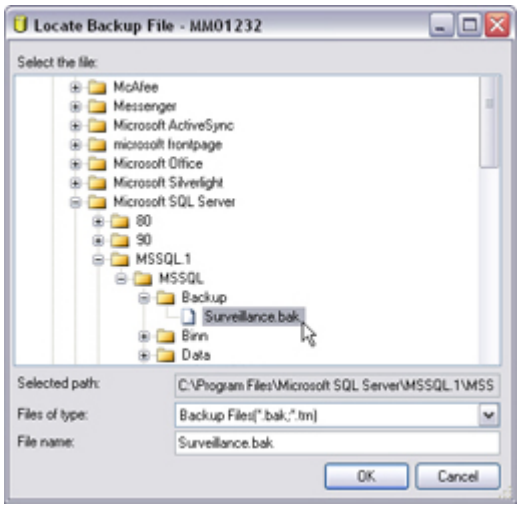
4. The *Restore Database* dialog's General page, do the following:

   - Under *Source for restore*: Select *From device* and click the ... button to the right of the field.

5. In the *Specify Backup* dialog, make sure that *File* is selected in the *Backup media* list. Then click the *Add* button:

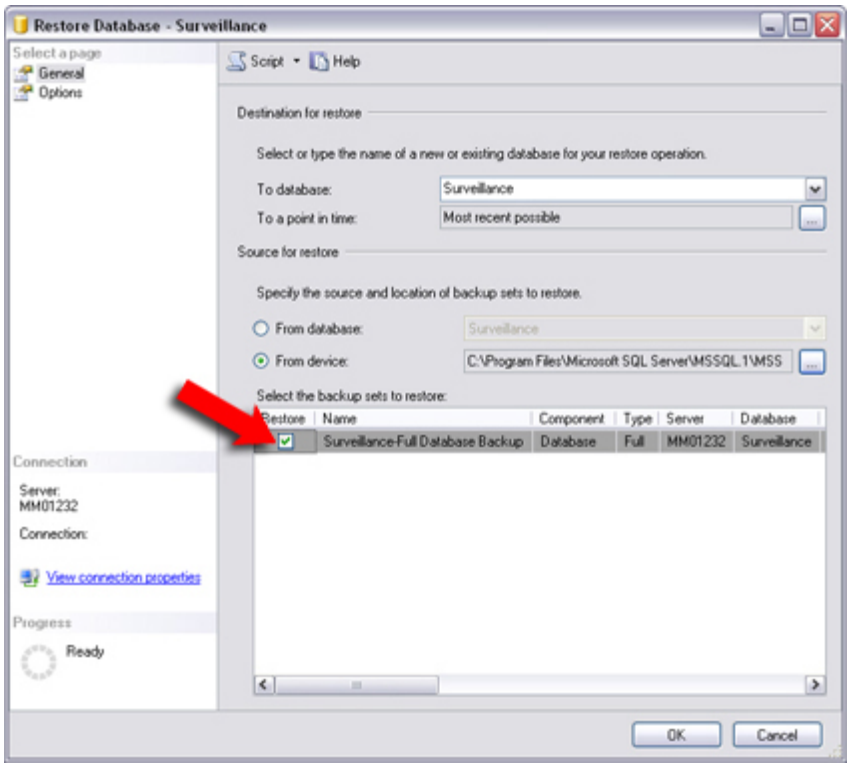


6. In the *Locate Backup File* dialog, locate and select your backup file *Surveillance.bak*. Then click *OK*:



7. Back in the *Specify Backup* dialog, the path to your backup file is now listed. Click *OK*.

8. Back on the *Restore Database* dialog's *General* page, your backup is now listed under *Select the backup sets to restore*. Make sure you select the backup by selecting the check box in the *Restore* column:



9. Now go to the *Restore Database* dialog's *Options* page, and select *Overwrite the existing database*. Leave the other options as they are.

10. Click *OK* to begin the restoration. When the restore is finished, you will see a confirmation:

Tip: If you get an error message telling you that the database is in use, try exiting Microsoft SQL Server Management Studio Express completely, then repeat steps 1-10.

Then exit Microsoft SQL Server Management Studio Express.

If you also backed up the *SurveillanceLog* database from the old Management Server, restore it on the new Management Server using the same method.

During the restore process, the Management Server service was stopped to prevent configuration changes being made until you were done. Remember to start the Management Server Service again.

Database Protection

If a recording server's databases become corrupted, the recording server is in many cases able to repair the corrupt databases. While the ability to repair corrupt databases is highly valuable, it is of course even better to take steps to ensure that your databases do not become corrupted:

- ### Power Outages: Use a UPS

  The single biggest reason for corrupt databases is the recording server being shut down abruptly, without files being saved and without the operating system being closed down properly. This may happen due to power outages, due to somebody accidentally pulling out the server's power cable, or similar.

  The best way of protecting your recording servers from being shut down abruptly is to equip each of your recording servers with a UPS (Uninterruptible Power Supply).

  The UPS works as a battery-driven secondary power source, providing the necessary power for saving open files and safely powering down your system in the event of power irregularities. UPSs vary in sophistication, but many UPSs include software for automatically saving open files, for alerting system administrators, etc.

  Selecting the right type of UPS for your organization's environment is an individual process. When assessing your needs, however, take into account the amount of runtime you will require the UPS to be able to provide if the power fails; saving open files and shutting down an operating system properly may take several minutes.

- ### Windows Task Manager: Be Careful when Ending Processes

  When working in Windows Task Manager, be careful not to end any processes which affect the surveillance system. If you end an application or system service by clicking *End Process* in the Windows Task Manager, the process in question will not be given the chance to save its state or data before it is terminated. This may in turn lead to corrupt camera databases.

  Windows Task Manager will typically display a warning if you attempt to end a process. Unless you are absolutely sure that ending the process will not affect the surveillance system, make sure you click the *No* button when the warning message asks you if you really want to terminate the process.

- ### Hard Disk Failure: Protect Your Drives

  Hard disk drives are mechanical devices, and as such they are vulnerable to external factors. The following are examples of external factors which may damage hard disk drives and lead to corrupt camera databases:

  - Vibration (make sure the surveillance system server and its surroundings are stable)
  - Strong heat (make sure the server has adequate ventilation)
  - Strong magnetic fields (avoid)
  - Power outages (make sure you use a UPS; see more information in the previous)
  - Static electricity (make sure you ground yourself if you are going to handle a hard disk drive).
  - Fire, water, etc. (avoid)

SNMP

NetEVS supports SNMP (Simple Network Management Protocol), a standard protocol for monitoring and controlling network devices, for managing their configuration, or collecting statistics, etc.

NetEVS will act as an SNMP agent, which can generate an SNMP trap as a result of a triggered rule. A third party SNMP management console can then receive information about the rule-triggering event, and operators of the SNMP management console can configure their system for further action as required.

The implementation uses Microsoft Windows SNMP Service for triggering SNMP traps. The SNMP Service must therefore be installed on recording servers. This will—when the SNMP Service has been configured through its own user interface—enable recording servers to send .mib (Management Information Base) files to the SNMP management console.

- ### Installing the SNMP Service

  1. On the required recording servers, open Windows' *Add or Remove Programs* dialog (*Start > Control Panel > Add or Remove Programs*).
  2. In the left side of the *Add or Remove Programs* dialog click *Add/Remove Windows Components*. This will open the *Windows Components Wizard*.
  3. In the wizard, select the check box next to *Management and Monitoring Tools*, then click the *Details...* button to open the *Management and Monitoring Tools* dialog.
  4. In the *Management and Monitoring Tools* dialog, select the check box next to *Simple Network Management Protocol*, then click *OK*.
  5. Back in the *Windows Components Wizard*, click *Next* and follow the wizard's further steps.

- ### Configuring the SNMP Service

  1. On the required recording servers, select *Start > Control Panel > Administrative Tools > Services*.
  2. Double-click the SNMP Service.
  3. Select the *Traps* tab.
  4. Specify a community name, and click the *Add to list* button.
  5. Select the D*estinations* tab.
  6. Click the *Add* button, and specify the IP address or host name of the server running your third party SNMP management station software.
  7. Click *OK*.

Virus Scanning

Virus scanning should in some cases be avoided—if allowed in your organization:

- If you are using virus scanning software on a recording server, it is likely that it will use a considerable amount of system resources on scanning data in the databases containing recordings.
- If you are using virus scanning software on an archiving location, it is likely that it will use a considerable amount of system resources on scanning all the data being archived.
- If you are using virus scanning software on the Management Server, it is likely that the virus scanning will use a considerable amount of system resources on scanning data from the Download Manager.

This may affect system performance negatively. Some virus scanning software may furthermore temporarily lock each file it scans, which may further impact system performance negatively.

If allowed in your organization, you should therefore disable any virus scanning of recording servers' databases, of any archiving locations as well as on the Management Server.

Removal

The Download Manager, which is installed on the Management Server, is removed separately from the Management Server Software:

1. In Windows's *Start* menu, select *Control Panel*, and select *Add or Remove Programs*.
2. In the *Add or Remove Programs* window's list of currently installed programs, select *Download Manager*.
3. Click the *Remove* button.

To remove the NetEVS Management Client software, use the following procedure on the computer on which the Management Client is installed:

Note: If you are not an NetEVS system administrator, do not attempt to remove the management software.

1. Open Windows' *Control Panel*, and select *Add or Remove Programs*. This will open the *Add or Remove Programs* window.
2. In the *Add or Remove Programs* window, select the *NetEVS Management Client* entry, and click the *Change/Remove* button.
3. A wizard window will open. Follow the wizard's steps, and click *Finish*.

Entirely removing your NetEVS Management Server includes removing the Management Server software itself as well as the Management Server database and NetEVS Windows components.

- ### Removing the Management Server Software

  To remove your Management Server software, use the following procedure on the computer on which the Management Server software is installed:

  Note: If you are not an NetEVS system administrator, do not attempt to remove the software.

  1. Stop the Management Server by right-clicking the Management Server icon in the computer's notification area (also known as the *system tray*), then selecting *Stop Management Server Service*.

     Example: Management Server icon in notification area

  2. Open Windows' *Control Panel*, and select *Add or Remove Programs*. This will open the *Add or Remove Programs* window.
  3. In the *Add or Remove Programs* window, select the *NetEVS Management Server* entry, and click the *Change/Remove* button.
  4. A wizard window will open. Follow the wizard's steps, and click *Finish* when ready.

- ### Removing the Management Server Database

  To remove your Management Server database, use the following procedure on the computer on which Management Server is/was installed:

Note: If you are not an NetEVS system administrator, do not attempt to remove the Management Server database.

IMPORTANT: The database stores the configuration you have made through the NetEVS Management Client, i.e. important settings relating to cameras, rules, etc. If you are removing software in preparation of upgrading to a newer version of NetEVS, you should therefore typically ***not*** remove the database. When installing the newer version, you will get the option of using the existing database.

1. Open Windows' *Control Panel*, and select *Add or Remove Programs*. This will open the *Add or Remove Programs* window.

2. In the *Add or Remove Programs* window, select the *NetEVS Database Server* entry, and click the *Change/Remove* button.

3. A wizard window will open. Follow the wizard's steps, and click *Finish* when ready.

Note: If you are not a surveillance system administrator, it is highly recommended that you consult your surveillance system administrator before removing any surveillance system-related software.

Prerequisites: Before removing the NetMatrix Monitor, make sure the application is not running. If the NetMatrix Monitor is running, shut it down by right-clicking the NetMatrix Monitor icon in Windows' notification area (also known as the system tray; typically located in the bottom right corner of your screen), then selecting *Exit*. Note that before the application closes, you will be prompted to specify the password required for communicating with your NetMatrix Monitor.

To remove the NetMatrix Monitor application, do the following:

1. In Windows' *Start* menu, select *Control Panel*, and select *Add or Remove Programs*. This will open the *Add or Remove Programs* window.

2. In the *Add or Remove Programs* window's list of currently installed programs, select *NetMatrix Monitor*.

3. Click the *Remove* button, and follow the removal instructions.

To remove an NetEVS recording server, use the following procedure on the computer on which the recording server is installed:

Note: If you are not an NetEVS system administrator, do not attempt to remove a recording server.

What happens to the recording server's recordings? During the removal process, you will be asked whether you want to keep the recording server's recordings.

1. Stop the Recording Server service by right-clicking the recording server icon in the computer's notification area (also known as the *system tray*), then selecting *Stop Recording Server Service*.

Example: recording server notification area icon

2. Open Windows' *Control Panel*, and select *Add or Remove Programs*. This will open the *Add or Remove Programs* window.

2. In the *Add or Remove Programs* window, select the *NetEVS Recording Server* entry, and click the *Change/Remove* button.

3. A wizard window will open. Follow the wizard's steps, and click *Finish*.

To remove Ocularis Client Lite, do the following on the computer on which Ocularis Client Lite is installed:

1. In Windows' *Start* menu, select *Control Panel*, and select *Add or Remove Programs*. This will open the *Add or Remove Programs* window.

2. In the *Add or Remove Programs* window's list of currently installed programs, select *Ocularis Client Lite x.x* (where x.x refers to the version number).

3. Click the *Remove* button, and follow the removal instructions.

Note: Video device drivers are small programs used for controlling/communicating with the camera devices connected to a recording server. When the video device drivers are removed, communication between the recording server and the camera devices will no longer be possible.

To remove video device drivers—typically prior to installing a later version of the drivers—use the following procedure on the recording server computer on which the video device drivers are installed:

1. Open Windows' *Control Panel*, and select *Add or Remove Programs*. This will open the *Add or Remove Programs* window.

2. In the *Add or Remove Programs* window, select the *Video Device Driver Vx.x* entry (where x.x indicates the relevant version number), and click the *Remove* button.

3. You will be asked to confirm that you want to remove the video device drivers. Click *OK* to remove them.

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